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A Clinical Lecture

ON

THE TREATMENT OF CANCER OF THE BREAST BY OPERATION.

Delivered at King's College Hospital

BY W. WATSON CHEYNE, C.B., F.R.S., F.R.C.S. ENG.,

PROFESSOR OF CLINICAL SURGERY AT KING'S COLLEGE AND SENIOR SURGEON TO KING'S COLLEGE HOSPITAL, ETC.

GENTLEMEN,—You have of late seen a number of cases of cancer of the breast in which operations have been performed and as the operative procedure which has been adopted in these cases is a matter of great importance I propose to put before you some of the main points. You will have observed that in all cases the operation has been a very extensive one. It is true that in some instances the disease itself was extensive, but in others the tumour in the breast has been comparatively small and nevertheless a large operation has been performed. Indeed, the extent of the operation has not been affected to any great degree by the amount of disease present, except in so far as the skin incisions are concerned or as the posterior triangle of the neck has been opened or not.

The modern operation which you see here is based on two fundamental principles, first, on the view that cancer is primarily a local disease and, secondly, on the removal of all probable lines along which it may spread whether visibly infected or not. The local *versus* the constitutional nature of cancer has been much debated and I need not discuss the matter here. Suffice it to say that the recent operative measures are founded on the belief that whatever may be the constitutional predisposition to the disease it actually commences in one spot and spreads from that over the rest of the body and that the aim of the operation must be not only to remove all visible disease but also to take away any invisible germs which may have become disseminated in the vicinity. On the view of the local origin of cancer it follows that if both the visible and the invisible disease are removed the patient should be freed from that particular attack and may never have any further trouble, although, of course, there is nothing in the operation to prevent him from having a fresh outbreak in other epithelial tissues.

In former days surgeons were very undecided on this question and hence the operations were performed, so to speak, in a half-hearted manner. Apart from that also the fear of sepsis and the want of knowledge of what we may call the anatomy of the disease rendered the old operation a very imperfect one according to our present ideas. Thus, if we go back, say, 50 years the operation laid down for cancer of the breast was a comparatively small and simple one. An elliptical incision was made over the breast, including the nipple and extending an inch or so above and below it, the skin was dissected up for some distance, and the prominent part of the breast, including the hard cancerous lump, was removed. It was very seldom that the incision was extended to the axilla or that any enlarged glands in the axilla were taken away. The result of these operations was that, while a case occasionally remained well—and it is quite possible that some of these were not carcinoma at all, seeing that histological examinations were at that time in their infancy—the disease recurred within a short time in the vast majority of the patients and very frequently the recurrence took the form of numerous nodules scattered along the line of the scar and in its vicinity; and, further, the disease frequently progressed much more rapidly after operative interference than it was apparently doing before. Indeed, so much was the latter the case that in the more slowly growing forms, of which what is termed "atrophic cancer" is the type, it came to be laid down generally that operation was not permissible. It was pointed out that in these cases the patients might live for several years without operation, while, on the other hand, if an operation was performed recurrence would in all probability take place quickly and the progress of the disease would be much more rapid than it had been—in fact, the cancer would lose more or less its atrophic character. And in other forms of the disease even the most sanguine held that at the best operation added but a few months to the life of the patient, while some surgeons, such as Benedikt, were so discouraged by the results which they obtained, partly as regards the mortality after operation and partly as regards the constant recurrence of the disease, that they gave up operating on cancer of the breast altogether. While this was the general result of operation in these cases some surgeons who held that the disease was really a local one tried to obtain better results by enlarging the area of operative interference. Thus, Gross made a clean sweep of the whole of the prominent part of the breast with the skin over it and also to some extent of the axilla, often leaving a large wound which could not be closed afterwards by stitches but which had to heal by granulation. To some extent his procedure was justified by improved results.

For a long time the enlargement of the glands in the axilla was a point to which attention was not greatly paid. The chief reason for this was no doubt that in those days sepsis was very prevalent and that the opening up of the axilla was generally followed by diffuse suppuration in that region, while some also held that the enlargement of the glands in the axilla was not necessarily due to cancerous infection but might to some extent be inflammatory. Where the surgeon came to the conclusion that the enlargement of the axillary glands was due to actual infection with cancerous material the presence of this condition was usually regarded as a contra-indication to operation. As regards the glands, the utmost that was done was to shell out any noticeably enlarged glands.

It was not till the end of the "sixties" that Lord Lister pointed out the possibility and the advisability of removing the axillary glands and fat in these cases by methodical dissection and under the protection of the antiseptic treatment. The operation as performed by Lord Lister from that time forward was a very free one compared with the old operation. He removed the skin much more extensively than was usually done and it was chiefly with the view of obtaining subsequent union of the edges in these operations that he elaborated his method of suturing wounds with button sutures, &c. He also made a point in most cases of stripping off the pectoral fascia and clearing the axilla in practically every case. His method remained the most complete up to recent times and has been followed by several other surgeons with marked improvement in results. As I saw almost all his later operations I became very much interested in the results and they certainly seemed to me to be a great advance on what was formerly obtained. Towards the end of the "eighties," however, I tried to trace as many of his private cases as I could and I was surprised and much disappointed to find that a large proportion had recurred either locally or internally, although the average prolongation of life was decidedly greater than formerly.

Up to this time what may be called the anatomy of cancer of the breast, and, indeed, the anatomy of the breast itself, was not really understood. These more extensive operations were done on the general idea that it was advisable to take as wide an area around the cancer as possible, but there was no precise knowledge as to the extent and direction of the possibly infected area, and it was not till the histological work of Heidenhain in Germany and of Stiles in Edinburgh was done that we knew with anything like precision what the state of matters was and what tissues must be removed in order to get rid of all possible disease. Before these researches were published this department of operative surgery was more or less haphazard and while in some instances good results were obtained there was a total want of precision about the work. Heidenhain and Stiles, however, showed us the lines of spread of cancer of the breast, how it tended to run along the lymphatics in the suspensory ligaments to the skin, how the lymphatics in the pectoral fascia became affected, how intimately the pectoral fascia is associated with the pectoralis major muscle, how the infection spreads in the breast and axilla, how extensive the breast itself is, and how the removal of the prominent part of the breast in no way implies removal of the whole organ.

I had the opportunity of seeing Mr. Stiles's work before it was published and was so impressed by it that about the end of 1889 I began to put his results into practice in operative work. I soon found marked improvement as regards the question of local recurrence and in April, 1892,

I read a paper at the Nottingham Medico-Chirurgical Society[1] calling attention to these new facts and indicating the nature of the operation which was required to apply them to practice. In 1894 Halsted,[2] who was working on the same lines, based more especially on Heidenhain's researches, also published a paper on this subject and his paper attracted more attention than mine; indeed, at that time he carried out the procedures in a still more thorough manner. This modern operation, founded on the researches of Heidenhain and Stiles, has now been adopted by many surgeons and it is this operation which you see carried out here.

I may now in a few words point out the essence of the modern operation. I will not go into details but I may recapitulate the essential points and these have reference chiefly to the method of dealing with the skin, with the fascia and muscles, and with the lymphatic glands and vessels.

1. *As regards the skin.*—The removal of the skin cannot be too free. None of the skin over the prominent part of the breast should be left behind and if the cancer is laterally situated irregular incisions must be made in that region so as not to approach the cancer closer than a couple of inches at least in any direction. Further, the incision must not be carried straight down to the muscle; it must gradually shelve away from the breast so that, for instance, in the case of the upper incision one should not in a fairly fat woman see the pectoral muscle till just below the clavicle. Unless this is done lobules of the breast will, as Stiles has shown, almost inevitably be left behind. I have never seen any sloughing of the edges of the skin follow even extensive undermining of the flaps and, in addition to the more thorough removal of the breast in this way, such undermining also increases the possibility of closing the wound after the operation is completed. As regards this last point, however, although in the great majority of cases by extensive undermining of the skin and by the use of strong silver wire tied as tightly as can be done I am able to bring the edges together, that is quite a secondary consideration and should not influence us with regard to the amount of skin removed, although it may be taken into account in planning the direction of the incisions.

2. *The method of dealing with the pectoral fascia and the muscle.*—The pectoral fascia must be completely removed and a portion at least of the greater pectoral muscle should be taken away in all cases. The latter must be done for two reasons: in the first place the pectoral fascia is so intimately connected with the muscle, dipping in between the muscular bundles, that an attempt to separate the fascia from the muscle is very apt to lead to lymphatic vessels and also outlying lobules of the breast which might possibly be infected being left behind. In addition, infected lymphatic vessels may be cut into and the cancer cells may thus be distributed over the surface of the wound. The second point of importance is that if a portion at any rate of the pectoral muscle is not taken away it is very difficult to clear out the axilla as thoroughly as ought to be done. The fascia over the serratus magnus where it is exposed in the axilla should also be taken away. As to the amount of the pectoral muscle that should be removed it is advisable to take away practically the whole of the sternal portion of the pectoralis major. At any rate it is essential to take away the lower portion co-extensive with the prominent part of the breast so as to be sure of taking all the pectoral fascia beneath it. But if this is done the remainder of the sternal attachment is not of any particular use; its nerve supply will in all probability be injured, while its removal facilitates the clearance of the axilla very considerably and also gives a better chance of approximating the edges of the wound afterwards. As regards the clavicular portion I think it is but seldom that it need be taken away, for its removal does not materially help the clearance of the axilla, while I have never seen any reason to suppose that infection may spread from the sternal to the clavicular portions and I believe that it is of much value for the subsequent mobility of the arm. As regards the question of the pectoralis minor some surgeons always remove that muscle as well, and no doubt where there is much glandular infection it is well to do so, both because in that way more thorough access to the axilla is obtained and also because in those circumstances the nerve supply of the muscle is almost certain to be injured, in which case it is, of course, rendered useless. Where, however, the axillary glands are not much affected and where the nerve supply can be preserved I generally leave the pectoralis minor, because in these circumstances the space can be quite well cleared without taking it away.

3. *The lymphatic glands and vessels.*—All the glands and fat in the axilla should be removed in one mass along with the breast. The breast should not be taken away first lest in dividing the tissues infected glands or lymphatic vessels be opened and cancer cells be distributed over the wound. The direction of the various chains of glands must also be borne in mind and there are three groups to which special attention must be paid. In the first place we have those which follow the axillary vein and in regard to these I would particularly direct attention to the importance of lifting up the vein at the apex of the axilla and of removing the fat and glands which lie behind it. One not uncommonly finds enlarged glands hidden away behind the vein at the upper part and unless the vessel is lifted up and the tissue is removed from behind it the operation will be futile. The other two chief lines of spread are upwards in front of the vessels and nerves and also behind them, following the course of the nerve of Bell; in both of these directions the fat and glands must be thoroughly dealt with.

A very important question which arises is whether the fat and glands in the posterior triangle of the neck should also be removed, although not apparently infected, in all cases. Of course, if any enlarged glands are felt in that situation there can be no question that the space should be thoroughly cleared if the operation is performed at all, and I must say that I am becoming inclined to clear the supraclavicular space more often than I formerly did. Certainly if in clearing the axilla infected glands are found high up in any of the positions indicated the probability of commencing infection of glands above the clavicle is very considerable and in those circumstances I think that it is well to open the posterior triangle and to clear out the fat and glands at the root of the neck. This is quite essential where enlarged glands are found at the point where the vein passes out of the axilla. But any marked enlargement of the supra-clavicular glands in my opinion renders the case inoperable from the point of view of radical removal. Halsted has also advocated in some cases following the glands down into the mediastinum. Personally, I have never done this and I doubt very much whether such a severe procedure is worth while. The cases where that would be necessary seem to me to come under the class of inoperable cases.

Such are the essential points of the operation as you see it carried out here and you will naturally ask, Are the results better than those which are obtained by a less severe operation and, if so, are they so much better as to justify the much greater severity of the procedure? With regard to the latter point the mortality after these operations is so slight that it may be practically disregarded. I have performed a large number of operations now and have only lost three patients; one of them at the time of the operation from ether and shock combined; one where the patient died suddenly ten days after the operation; and one from sepsis, where we found afterwards that my assistant had a small pustule on his finger which he did not know of at the time. Hence, from the point of view of mortality, the greater severity of the procedure is practically a matter of no moment and we are really only concerned with the relative value of the results obtained. These results must be considered from two points of view—namely, the prolongation of life and the question of recurrence.

In my Harveian lectures on the Objects and Limits of Operations for Cancer, published in 1896, I gave a list of the cases on which I had operated on on the above lines and in a later paper, which appeared in THE LANCET,[3] I not only brought these cases up to date but added a number of others, making the list up to 99. Since that time I have operated on a much larger number of patients, but it is unnecessary to make a further list because the results are apparently the same as those formerly obtained, and, as a matter of fact, what we want now to know is not so much the condition of the patient soon after the operation as the condition after the lapse of several years. As six years at least have elapsed since the operations on the patients in my last list were performed, we can obtain some information with regard to the latter point and I have attempted to trace these patients up to the present time. My list contained cases operated on both in private and at

[1] See THE LANCET, August 13th, 1892, p. 357.
[2] Annals of Surgery, vol. xx.

[3] THE LANCET, March 18th, 1899, p. 756.

the hospital and, as regards the private patients, I have been able to trace all with one exception and have either been able to verify the results myself or have been informed of them by the medical attendant. As regards the hospital patients, such a large number cannot now be traced that they are useless from a statistical point of view and comparatively few have been verified either by myself or by a medical man. In a large city like London it is not surprising that the poor should be lost sight of in a number of years varying from six to 13. They do not remain long in one place and there is no particular reason why they should leave their addresses and the result is that a number of my letters have been returned marked "Gone away" or "Not known." It will, however, I think, suffice for all practical purposes if I use the private patients, all of whom I can trace with one exception. They give a very fair view of what may be expected from the radical operation after a long period of years.

Before going into the figures I may here state that in determining the cases to be operated on I make no selection from the point of view of getting good statistics. Hopeless cases have naturally been refused operation—that is to say, cases where from the local distribution of the disease it was clearly impossible to remove it or where internal deposits were undoubtedly present. But where there has seemed any chance of removing the disease, even though only a very poor one, the patient has been given the benefit of the doubt. It will be seen from the lists published in the Harveian lectures and in THE LANCET as before mentioned that some of the cases were so nearly hopeless that if I had had the slightest regard for statistical results they would have been excluded, but as in several very unfavourable cases no recurrence has taken place after a considerable time I have not felt justified in refusing operation except in clearly hopeless cases.

Coming now to the statistical results in the list referred to 34 of the cases were private patients and were operated on in private and I have been able to trace them all with one exception. In these cases from six to 13 years have elapsed since the operation was performed.[4] The result is that at the present time 17[5] of these 34 cases are alive and well without any recurrence. In 14 cases[6] recurrence has taken place and 13 of these patients have now died from the disease. Two patients have died from other troubles without any trace of recurrence having manifested itself; one (Case 51) died from pneumonia two years after the operation and one (Case 54) from heart disease seven years after the operation. One patient (Case 55) cannot be traced. This gives 50 per cent. alive and well after periods varying from six to 13 years[7] or if we study the recurrences we have 58·8 per cent. in which there was no recurrence and 41 per cent. in which there was recurrence; or if we assume that the case lost sight of also recurred there are 44·1 per cent. of recurrences; or, to make the result still more definite, as the future of the two cases which died is uncertain as regards ultimate recurrence, we may say that we know the exact facts in 31 cases and of these 17, or 54 8 per cent., are alive and well and 14, or 45·2 per cent. have recurred.

Thus, in whatever way we work out the figures we get the result that from 50 to 55 per cent. of the cases in which this operation has been performed are alive and well after periods varying from six to 13 years. This gives a very fair estimate of the final results of the modern operation as applied to all cases except those in which it is obviously impossible to remove all the existing disease. I have no doubt that had I aimed at getting the best statistical results and selected the cases from that point of view a decidedly better percentage would have been obtained; but I do not think that such a selection is fair to a patient suffering from such an inevitably fatal disease as cancer of the breast, more especially as in this instance the mortality after operation is quite insignificant. The question of selection of cases for operation is totally different where the cancer is situated in regions where the mortality from the operation is considerable and where it increases with the extent of the disease. In such circumstances the question must be whether the probability of non-recurrence is sufficiently great to justify the risk which the patient runs, but in these instances, where the question of operative mortality may be practically ignored, I do not think that such selection is justifiable. Besides, it is impossible to prophesy the result as regards recurrence after operation. Several cases which seemed limited and small and which I looked on most hopefully have recurred, while others which I thought were practically hopeless have shown no further sign of disease.

Thus, taking this list of private patients, had I been selecting them with an eye to statistical results I would probably have excluded 11 (two of these, indeed, were practically hopeless from the first—namely, Cases 35 and 84). Nevertheless, of these 11 cases four have remained free from disease—namely, Case 27 for ten years, Case 35 for nine and a half years, Case 72 for seven and a half years, and Case 54 who died from heart disease after seven years without any sign of recurrence. From a practical point of view, however, it is interesting to attempt to separate the cases into groups and we may take two sets of groups—namely, (1) according to the apparent rapidity of the growth; and (2) according to the extent of the disease at the time of the operation.

1. In the first group, looked at from the apparent rapidity of growth, we have two classes: (*a*) Slow-growing cancers. In this group we probably have Nos. 6, 14, 39, 55, 59, 67, 71, and 83—eight cases, of which six remained well, one recurred, and one has been lost sight of. Assuming that the latter recurred, we have 75 per cent. in this group remaining well and 25 per cent. recurring. (*b*) More rapidly growing cancers. Here we have a list of 26 cases, 13 of which remained well and 13 recurred, giving 50 per cent. each way.

2. A more useful grouping is according to the extent of the disease at the time of the operation: (*a*) Small tumour in the breast with moderate infection of the axilla. Here we have Cases 5, 6, 11, 39, 50, 53, 55, 59, 61, 67, 71, 74, 76, 82, 87, 88, 90, 94, and 98—that is to say, 19 cases of which 13 have remained well, five have recurred and one has been lost sight of; thus, 68 4 per cent. certainly remain well and probably 31·6 per cent. have recurred. (*b*) Marked infection of the axillary glands. These include Cases 14, 27, 33, 35, 37, 51, 54, 72, 83, 86, 96, 97, and 99—that is to say, 13 cases of which six, or 46 per cent., have not recurred and seven, or 54 per cent., have recurred. (*c*) Cases where the supraclavicular glands were distinctly enlarged at the time of the operation. These were two in number—namely Cases 36 and 81—and in both of these recurrence took place. This last division is a most useful one and gives a fair idea of the result of the modern operation. It shows that the earlier and more limited the cancer the greater the chances of success; but it also shows that there is no possibility of prophesying in any individual case, for, on the one hand, in the most favourable cases recurrence may take place when the disease has apparently been widely removed, while in other cases which seemed unfavourable the patients remain well. This no doubt depends on various circumstances which have led, on the one hand, to an early and wide dissemination of the disease and, on the other hand, to marked local growth without dissemination. What these circumstances are it is most difficult to say. Cancers vary very much in their virulence, some having a great tendency to rapid dissemination and growth, such as the florid cancers of the breast, while others grow and disseminate with extreme slowness, such as the typical atrophic scirrhus, and there is every degree between these two extremes. This may be due to the existence of different kinds of cancer or, on the other hand, to varying tendencies in the body to cellular growth. The early dissemination may also be due to accidental circumstances, such as handling the growth, blows, &c., which force the cells into the vessels and thus lead to early dissemination in cases where the disease is otherwise apparently small and limited.

It is interesting to note the seat of recurrences in the first group. In No. 11 the recurrence appeared in the internal organs about six and a half years after the operation, and later in the form of nodules in the skin and various parts of the body. In Case 53 the recurrence took place in the abdomen and was evident in less than two years. In Case 76 a thickening appeared about two years later in the other breast and afterwards there were nodules in the skin. The disease in the other breast may have been, of course, a fresh development. The patient was still alive in July, 1903. In Case 90 the recurrence was quite rapid and occurred

[4] The numbers of these cases in the former lists are 5, 6, 11, 14, 27, 33, 35, 36, 37, 39, 50, 51, 53, 54, 55, 59, 61, 67, 71, 72, 74, 76, 82, 83, 84, 86, 87, 88, 90, 94, 96, 97, 98, and 99. (See Harveian lectures, 1896, and THE LANCET, March 18th, 1899, p. 756.)

[5] Nos. 5, 6, 27, 35, 39, 50, 59, 61, 67, 71, 72, 74, 82, 83, 87, 88, and 94.

[6] Nos. 11, 14, 33, 36, 37, 53, 76, 84, 86, 90, 96, 97, 98, and 99.

[7] Of these cases 2 are alive after 13 years, 1 after ten years, 2 between nine and ten years, 3 between eight and nine years, 6 between seven and eight years, and 3 between six and seven years.

especially in the thorax and liver and the patient died 11 months after the operation. In Case 98 the patient had an attack of pleurisy (? cancerous) about two and a half years after the operation and subsequently developed intense pain in the spine followed by paralysis and she ultimately died; there was no local recurrence. As regards the third group, although it only contained two cases it confirms the conclusion which I have come to—namely, that when the supraclavicular glands are infected the chances of arresting the disease are extremely slight; in fact, if at all marked, especially if the disease is noticeable towards the anterior part of the root of the neck, the chances are, I believe, practically *nil*.

The most striking fact with regard to these cases is the great rarity of a second operation and, indeed, in the above list in only three instances was a second operation performed. This is my experience not only in these cases but in the whole of my work. Instead of, as used to be the case formerly, a second operation being performed after a few months or a year in a very considerable number of instances it is quite rarely that I operate for recurrence and that for two reasons. In the first place, in cases really favourable for operation recurrence in the area of the operation wound—that is to say, in the breast or the axilla—is quite a rarity. As a rule when recurrence takes place in these cases it is either in the supraclavicular glands or in the bones or in some internal organ, and almost the only secondary operations I have performed have been done with the view of removing enlarged glands from the posterior triangle of the neck. In the second place, where recurrence has taken place in the region of the operation it has been in bad cases and there has been evident disease elsewhere and therefore operation for the removal of such recurrences would be futile; indeed, in the few instances where nodules have appeared on the side of the chest this has not as a rule been the first place where recurrence was noticed. Most usually internal recurrences, more especially intrathoracic disease, have been observed before anything was apparent on the external surface and then the nodules in the skin and subcutaneous tissues have come as a more or less sudden eruption. In these circumstances they have seemed to me to be not so much an indication of local deposits left behind at the time of the operation as a generalised eruption secondary to the internal recurrence.

As to the date of recurrences I only know approximately the time at which attention was drawn to them, which, of course, is not the time at which the fresh disease began to grow. As would be expected, where the recurrences are not local a longer time will elapse before the recurrence becomes evident than where it is the result of disease left behind in the area of the operation and in the cases where recurrence has taken place there has evidently been a considerable gain in the length of life over the old operation. One very interesting point is the lateness of the recurrence in several instances. The longest case of late recurrence which I have had was one in which I did a free operation before I began following the definite lines of Stiles's and Heidenhain's researches. In that case the patient turned up at the hospital some 13 years after the operation with numerous large glands in the posterior triangle of the neck. She stated that she was quite well till about six months previously when she had a bad attack of influenza and that subsequently to that the glands above the clavicle began to enlarge. I did not operate on her and therefore cannot assert positively that these were cancerous glands, but I have not the slightest doubt in my own mind that they were so from the clinical appearances.

In the cases in this list there are two distinct instances of late recurrence—namely, Case 11, where the disease appeared about six years after the operation, apparently about the sternum and mediastinum, and Case 14, where the disease appeared about seven years after the operation in the glands of the neck. In these instances there can be no doubt that the cancer cells were present in the glands, &c., at the time that the operation was performed and they must have either been lying dormant for some time afterwards or else have been growing extremely slowly. In Case 14 the cancer approximated closely to the atrophic form of scirrhus and therefore the growth may have been steady but very slow, but in the other cases this was not so. The cancer was a much more rapidly growing form and it seems to me that in that instance the growth of the cells must have been more or less arrested for a time after the operation. In several other cases where the cancer was growing rapidly at the time of the operation and where I have expected rapid recurrence an interval of two or three years has elapsed before this has taken place and I cannot but think that the cancer cells in these cases must have grown more slowly, if at all for a time, after the operation than they were doing before it. In more than one instance the reappearance of the disease followed an illness, such as influenza, which left the patient in a weak state of health.

From a study of the recurrences after the modern operation I have come to the conclusion either (1) that cancer in its early stage in a healthy body grows extremely slowly and that it is only in the later stages, when the resistance of the body is broken down, that the more rapid growth occurs; or, on the other hand, (2) that the extensive modern operation in some way or other exerts an inhibitory growth on cancer cells which are left behind in the vicinity. It is quite conceivable that a combination of these two explanations may be correct. Thus, where only two or three cancer cells are present in the body of the patient with good resistance they may take a long time to acquire a firm hold and not till the body resistance is broken down either by intercurrent illness or by toxæmia from the products of the cancer cells themselves does the growth become more rapid. Hence operation, by removing the cancerous masses which are lowering the body resistance by their products, may render it difficult for the few cells that are left behind to start fresh growth. From this point of view the difference in the rapidity of recurrence after the modern and after the old operation may be solely dependent on the amount of disease left behind in the two cases. In many instances in the old operation collections of considerable size are left behind and recurrence is rapid; whereas in the modern operation presumably any cells which are left behind in the vicinity are very few in number and local recurrence is slow. In the matter of internal recurrence there is no marked difference in the two cases. In that instance in all probability the internal deposits, although not yet producing symptoms, are of sufficient size to be more or less independent of the resisting power of the body.

In some instances, however, it appears as if the cancer cells must have lain dormant for a time after the operation. In that case, apart from the removal of the mass which is poisoning the body and thus allowing the resistance of the body to be improved, it is conceivable that the modern operation may influence local deposits left behind in other ways. As the result of the procedure lymph channels are extensively removed and the lymph flow is arrested or slowed through the part and thus the distribution and nutrition of any cancer cells left behind may be much interfered with. The vascular arrangements are also much altered and nerves are extensively divided. As regards the latter point, Mr. G. L. Cheatle has shown some very interesting photographs which seem to indicate a certain relation between nerve supply and the growth of cancer. They especially indicate a greater tendency for the disease to spread along the area of the particular nerve distribution in which it first occurred rather than indefinitely into neighbouring nerve areas. In this operation the trophic nerve influence must be profoundly altered in the area of the operation and this may be of some unknown importance.

I think that we may now form a fairly final judgment with regard to the treatment of cancer of the breast by operation. We may say, for example, that taking the average of all cases operated on, favourable or otherwise, something like 50 per cent. will remain well for a number of years and in those cases in which the tumour is small and well limited and the glandular infection is slight the proportion of successes will be considerably greater. We may also say that where recurrence takes place it is most usually internally and the suffering of the patient is less than if no operation had been performed, while life is considerably prolonged: and that these results are due to the more precise and extensive removal of all possibly infected areas—the breast, the skin, the pectoral fascia, the muscles, the glands, &c.—in the modern operation, and also, and this is very important, to the fact that the cancerous deposits are not cut into at the time of the operation and the cells thereby distributed through the tissue. Again, we may conclude that cancer is a local disease at its commencement and if only all the existing disease can be got rid of there is no reason for any further development from the primary focus. It is purely a question at the time of the operation of getting beyond all the disease. Recurrences, both general and local, are the result of direct spread from the original

focus Epithelial growths cannot originate in the lymphatic glands or other non-epithelial structures; the cancer cells are the direct progeny of cells in the original tumour. At the same time I do think there is a greater tendency to cancer in one individual than in another and that, for example, the formation of cancer in one breast after removal of the other for the same disease may just as likely be a fresh development altogether as a growth secondary to the original tumour I have seen cylindrical epithelioma appear in the rectum in a patient whose tongue had been successfully excised for a squamous epithelioma five years previously. I have seen a rodent ulcer occur after a successful operation for cancer of the breast, and so on, and I must say I believe in the existence of a general tendency to cancerous development. But even if this be the case and the patient may one day develop another cancer elsewhere that is no argument against the removal of the original disease as completely as possible, seeing that it may be many years, if at all, before any fresh trouble arises and that, on the other hand, if the original disease is left or only partially taken away the life of the patient must be comparatively short. Above all things remember that in the *first* operation lies the patient's only chance and that it must therefore be done with the greatest thoroughness, however limited the disease may be at the time of the operation.

ABSTRACT OF

The Hunterian Lectures

ON

THE EVOLUTION AND ACTION OF CERTAIN MUSCULAR STRUCTURES OF THE HEART.

Delivered before the Royal College of Surgeons of England on Feb. 22nd, 24th, and 26th, 1904,

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LECTURE III.[1]

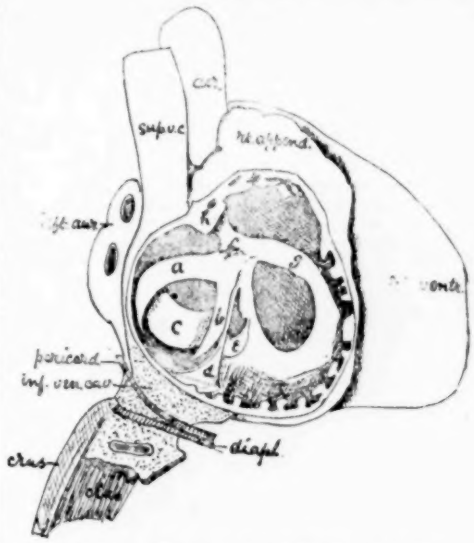
Delivered on Feb. 26th.

CLOSURE OF THE FORAMEN OVALE.

MR. PRESIDENT AND GENTLEMEN.—The impression given on reading an account of fœtal circulation is that the right auricle is a passive, open chamber through which the blood of the superior vena cava passes to the right ventricle and that of the inferior vena cava flows through the foramen ovale into the left auricle. The active contraction of the limbic muscular bands which make up the annulus ovalis is not taken into account (Fig. 12). Since only about one-third of the blood from the right ventricle passes through the lungs before birth and thus reaches the left auricle at least two-thirds of the blood must reach the left ventricle by the foramen ovale. Before birth the auricles are surrounded by the solid unyielding lungs and are filled by being actively dilated through the contraction of the ventricles, for there is then no respiratory pump. At the commencement of auricular systole the limbic bands which seize the termination of the inferior vena cava, by compressing and drawing that vessel towards the foramen ovale, pump the pure arterial or placental blood into the left side of the heart. With the first descent of the diaphragm the action of the limbic bands is altered. The termination of the inferior vena cava, firmly fixed in the diaphragm, is drawn down by that muscle and the plane on which the limbic bands act becomes more vertical in direction. Their origin in the inter-auricular septum is drawn towards the vena cava, thus helping to close the foramen ovale (Fig. 12). The fall of pressure in the right ventricle and the rise of pressure in the left auricle are the other conditions which lead to closure of the foramen ovale.

[1] Lectures I. and II. were published in THE LANCET of Feb. 27th (p. 555) and March 5th (p. 629), 1904, respectively.

FIG. 12.

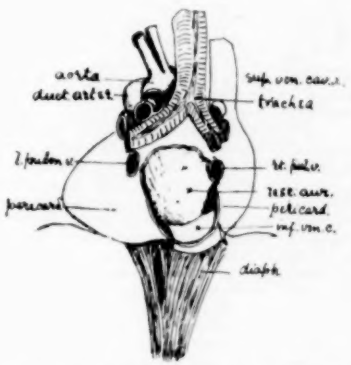


The right auricle of a newly born child thrown open. *a*, Upper limbic band. *b*, Lower limbic band. *c*, Septum ovale. *d*, Eustachian valve. *e*, Thebesian valve. *f*, Union of limbic bands on septum, behind root of aorta. *g*, Annular fibres of auricular canal. *h*, Section of right tænia terminalis.

CLOSURE OF THE DUCTUS ARTERIOSUS.

As a rule nothing is said in accounts of the fœtal circulation of the mechanism which brings about the closure of the ductus arteriosus. With the first breath two forces come into operation which lead to its obliteration. When a section is made across the aorta and ductus near their point of union (Fig. 13) it is seen that the wall of the ductus is round in outline and projects within the aorta, giving the lumen of that vessel a crescentic shape From that appearance one may infer that the pressure within the pulmonary artery is greater than that within the aorta before birth, and the fact that the wall of the right ventricle is then thicker than that of the left points to this being so. At birth, owing to the opening up of the pulmonary circulation and the closure of the foramen ovale, the pressure in the aorta becomes twice that, or more, in the ductus arteriosus, with the result that the wall of the aorta now bulges outwards and projects within the lumen of the

FIG. 13.



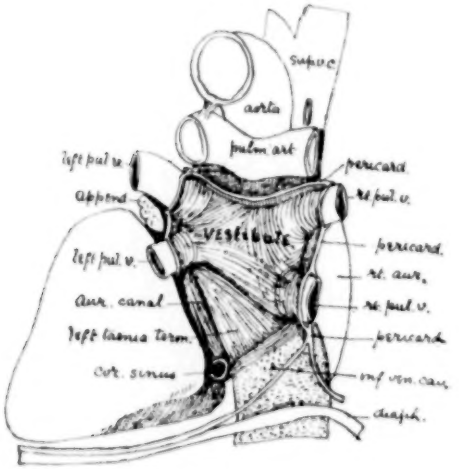
The heart and great vessels of a full-time child exposed on their posterior aspect. The wall of the ductus anteriosus is seen to project within the lumen of the aorta.

ductus arteriosus, thus blocking the flow through that vessel. The diaphragm also plays a part. Before birth the ductus arteriosus is on a level with the arch of the aorta; after birth it ascends obliquely to reach that vessel. The ductus arteriosus arises within the apex of the pericardium and passes to the arch of the aorta. With the descent of the diaphragm the whole pericardium and its contents are drawn downwards. The arch of the aorta, on the other hand, is bound to the neck by the carotid sheaths and cervical fascia. Hence a strain is thrown on the ductus which assists in retarding the flow of blood through it.

CONSTITUTION OF THE LEFT AURICLE.

In the human left auricle is to be seen the climax of a transformation which has led to the partial suppression of the auricle proper by the growth of a new part—the vestibule. The vestibule is shown in Fig. 14; it is that part of the left

FIG. 14.



Heart dissected from behind to show the parts of the left auricle. The attachments of the pericardium to the heart are represented. It will be seen that the termination of the inferior vena cava acts as a fulcrum for the musculature of the left auricle.

auricle into which the pulmonary veins pour their blood and which is demarcated from the rest of the auricle by the strong muscular band already described as the left tænia terminalis. At an early stage of development the left auricle, like the right, consists of two parts, an auricular canal and the auricle proper; there is then no vestibule. The septum between the two auricles is derived by an inflection of the auricular canal. The lungs occupy the dorsal or spinal part of the body cavity, the heart the ventral or sternal. The pulmonary veins issue from the lungs and join to form a single trunk which passes forwards to pierce the auricular canal. To the right of its orifice is the septum, to its left a band of muscle representing the tænia terminalis which in the amphibians and reptiles helps to close the orifice of the vein during auricular systole and which we may suppose acts in a similar manner in the human embryo. In the course of development the heart sinks backwards between the lungs and the lungs grow forwards over the heart, thus altering completely the relationship of the pulmonary veins to the heart. The pulmonary veins are pulled right and left, their common termination in the auricle separates, and their orifices move apart. Then the upper and lower veins of the same side separate and move apart. As the venous orifices separate the musculature of the auricular canal grows over and fills the intervals of separation and in this way the vestibule of the left heart is produced and ultimately comes to lie behind the right auricle and to form by far the largest part of the left (Fig. 14). The left tænia terminalis is drawn outwards from the septum and forms a horseshoe band that surrounds the vestibule (Fig. 14). Every stage in the development of the vestibule of the human heart can be seen in a permanent form by a study of the hearts of reptiles, birds, and mammals. The auricle proper, which is so large in the right chamber, is reduced to the mere appendix in the left. The auricular canal from which the vestibule was developed is surrounded by annular fibres which lie hid in the auriculo-ventricular groove. Thus the left auricle consists of vestibule, auricular canal, and auricle proper.

CLOSURE OF THE PULMONARY VEINS.

The left auricle is suspended between the roots of the lungs (Fig. 15). As the pulmonary veins enter the peri-

FIG. 15.

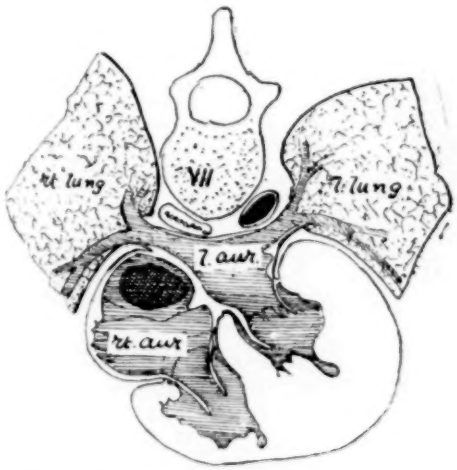


Diagram to show the relationship of the left auricle to the roots of the lungs. A transverse section at the level of the seventh dorsal vertebra is represented.

cardium they are surrounded by circular fibres continuous with, and derived from, the musculature of the vestibule (Fig. 14). Besides these circular fibres, which act as sphincters to the pulmonary orifices, the left tænia terminalis plays a leading part in preventing regurgitation of blood. Rising from the termination of the superior vena cava, where it is continuous with the corresponding band of the right side, it passes to the left, looping round the vestibule and termination of the pulmonary veins to end in the inter-auricular septum and auricular canal. In systole it sinks within the auricle and covers the orifices of the pulmonary veins. It becomes greatly hypertrophied in the early stages of mitral stenosis.

THE DIFFERENT EFFECT OF MITRAL INCOMPETENCE AND MITRAL STENOSIS ON THE PULMONARY VEINS.

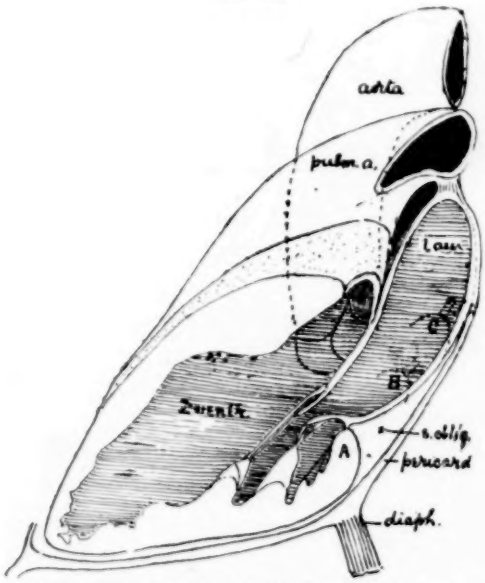
No fact is better recognised than that the train of symptoms which follows mitral stenosis differs from those that follow mitral incompetence. The difficulty in explaining the cause of the difference lies in a loose conception of the manner and time in which the pulmonary orifices are closed. In mitral stenosis the highest pressure within the auricle occurs during systole of the chamber when the pulmonary orifices are closed or, in case of dilatation from back pressure, partially closed; in mitral incompetence the highest pressure occurs when the walls of the auricle are relaxed in diastole and when the pulmonary orifices stand wide open, so that the ventricular wave of pressure may spread right within the venous system of the lung. The widespread character of mitral regurgitant bruits is probably due to their diffusion in the veins.

CONTRACTION OF THE LEFT AURICLE.

In systole the anterior wall of the left auricle comes into apposition with the posterior wall and the cavity of the vestibule is reduced to a slit. In studying the manner in which this is produced one has to take into account the relationships of the auricle (Figs. 15 and 16). Behind, it is in contact with the œsophagus and aorta in the posterior mediastinum and spinal column, unyielding structures which prevent any forward movement of the posterior wall.

In front of it are the commencement of the aorta and right auricle, both of which are drawn backwards in auricular systole and come forwards again in diastole. When the auricle contracts the posterior part of the base of the left ventricle is drawn upwards and occupies the room vacated by the auricle (Fig. 16). The manner in which that movement is produced may be understood from a reference to Fig. 14, which shows the left auricle in a position of semi-contraction. The annular fibres which surround the neck of the

FIG. 16.



Vertical section of the heart (hardened *in situ*) laying open the left side. The left auricle is dilated from a stenosis of the mitral orifice. A, Posterior base of the left ventricle. B, The position of a normal base in diastole of the auricle. C, The position of a normal base in systole of the auricle.

left auricle rise within the inter-auricular septum and pass to the left in front of, and behind, the auricle to meet and to turn up on the appendix. When they contract the neck of the auricle is greatly contracted and pulled inwards and upwards to the inter-auricular septum, carrying in the same direction the base of the left ventricle. The vestibule, it will be observed, is firmly fixed to the termination of the inferior vena cava, which serves as a fulcrum for its musculature (Fig. 14); its right and left extremities are held by the pulmonary veins; its upper border is bound by a reflection of pericardium to the fibrous tissue below the arch of the aorta. Hence in systole of the auricle its walls converge upwards and to the right towards the fixed points just enumerated. As the auricle contracts the base of the left ventricle is drawn upwards to occupy its vacated space and thus receives its load. The auricle, because it is fixed by the venous terminations, cannot move to the ventricle, so the base of the ventricle moves to the auricle. When the thorax is opened and the lungs collapse the left auricle loses its pulmonary supports and its muscular mechanism is thus upset.

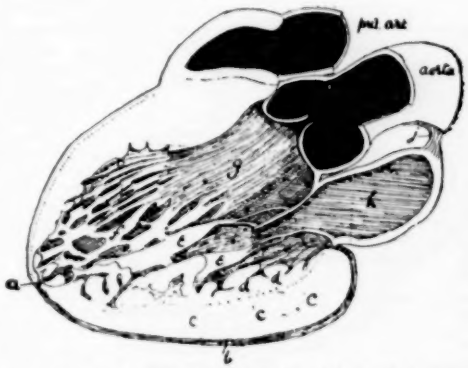
DIASTOLE OF THE LEFT AURICLE AND PRODUCTION OF ITS NEGATIVE PRESSURE.

In systole of the ventricle its posterior base moves downwards and brings about an active dilatation of the left auricle (Fig. 16). With the outflow of blood into the aorta the arch of that vessel is unbent somewhat and its ascending part springs forwards, thus helping to increase the size of the auricular chamber. In raising the pressure in the pulmonary artery of a cadaver from 40 to 60 millimetres and that in the aorta from 140 to 180 millimetres I found that the ascending aorta came forwards 8 millimetres. The descent of the base of the left ventricle is due to (1) the fibres which rising at the apex of the heart ascend straight on the diaphragmatic or posterior surface of the left ventricle to end on the membranous ring at the auriculo-ventricular orifice; (2) to the columnar layer on the inner surface of the heart which runs on the lateral wall of the ventricle from apex to the membranous ring at the base; and (3) to the musculi papillares. All these act from the apex as a fixed point.

THE EFFECT OF PERICARDITIS ON MOVEMENTS OF THE LEFT AURICLE.

In order to allow its movements to take place freely and without friction the anterior wall of the left auricle is separated from the aorta and pulmonary artery by the transverse sinus (Fig. 17), while the posterior has inserted

FIG. 17.



Section of the left side of a heart, hardened *in situ*, to show the thinning of the muscular wall at the apex and the arrangement of the muscular fibres that depress the auricular base. The heart is hypertrophied from disease of the kidneys. *a*, Vortex of apex. *b*, Outer longitudinal fibres which pass from the apex to the posterior base. *c*, Circular or "driving" fibres. *d*, Inner longitudinal or columnar fibres passing from the apex to the posterior base. *e*, Musculi papillares. *f*, Columnar fibres from the apex to the root of the aorta. *g*, Smooth wall of conus. *h*, Left auricle. *j*, The attachment of the upper border of the left auricle to the aorta.

between it and the pericardium a serous diverticulum, the sinus obliquus (Fig. 16). In pericarditis adhesions are very apt to occur between the walls of the left auricle and the surrounding structures, with the result that the movements of the auricle and the power to produce a negative pressure within their cavities is partly or completely lost.

MOVEMENT AND FUNCTION OF THE AURICULAR APPENDICES.

In late stages of heart disease when the auricles become greatly dilated the appendix of the right auricle, very rarely that of the left, is found filled and distended by an ante-mortem clot. The contraction of the appendix constitutes the final act of the auricular systole. The base of the appendix moves nearer the centre of the auricle so that its mouth lies over the auriculo-ventricular orifice at the end of auricular systole. The systolic retraction of the right appendix is brought about by a special retractor band which, rising from the tænia terminalis internal to the superior caval orifice, branches out within the cavity of the appendix. The left appendix, which represents not only the appendix but the whole of the proper auricle of the right side as well, is drawn inwards by a band which springs from the left tænia terminalis. The contraction of the appendices completes the loading of the ventricles. When the auricles become permanently distended the ventricles are filled in the initial stage of the auricular systole, so that the appendices get no opportunity of discharging their load. Dr. James Mackenzie regards the clot in the appendix as a result of paralysis of the auricle.

FIXATION OF THE APEX OF THE HEART.

The apex of the heart is the least moved part of the ventricles during systole. It becomes then a functionally fixed point from which the musculature of the ventricles may act on the auricles. In reptiles the cardiac apex is fixed by a ligament, but in birds and mammals this end is accomplished by the peculiar structure of the left ventricle.

Those who have examined the thickness of the wall of the normal left ventricle must have been struck by its thinness at the apex (from two to three millimetres) and thickness at the base (from 12 to 15 millimetres) and marvelled why rupture of the apex is not more common than it is (Fig. 17). The muscular fibres at the base, owing to the wide calibre, act at a disadvantage in emptying the ventricle and therefore are increased in number, but the difference between the diameter of the base and apex will not account for the great difference in the thickness and arrangement of their muscular coats. In the wall of the left ventricle of all mammals the three layers of muscle described by Henle can be recognised. They are the outer longitudinal, the inner longitudinal, and the great middle "driving" layer of circular or spiral fibres. Of the bundles of spiral fibres no more need be said than this, that they pass in their oblique course from the outer to the inner surface of the ventricular wall and that each layer runs at a slightly different angle to the one deeper to it. In the superficial longitudinal fibres there are two distinct sets and both rise in the vortex at the apex (Fig. 17). One set runs straight upwards on the diaphragmatic surface of the left ventricle to end in the membranous ring at the base. The other passes spirally on the anterior surface to end chiefly on the base of the aorta, but some end by passing into the septum at the anterior interventricular groove. The inner longitudinal fibres begin in the reticular meshwork of the apex and like the outer longitudinal fibres, those on the septal wall end in the aortic orifice, while those in the lateral and posterior wall, including the musculi papillares, end in the membranous ring at the base. In systole the apex becomes the seat at which two forces act in opposite directions. While the thick layer of circular fibres in the basal part would drive it outwards, the longitudinal fibres act in the opposite direction and draw it inwards. The two forces are equally balanced in expelling the ventricular column of blood and hence the comparatively stationary position of the apex. While the longitudinal fibres that end in the root of the aorta act mainly on the apex as restraining fibres (for the slightness of the shortening from the apex to the origin of the aorta in systole is an observation in which physiologists agree) the fibres which pass to the base of the ventricles use the apex as a fulcrum from which they draw forwards the lateral and posterior base of the left ventricle.

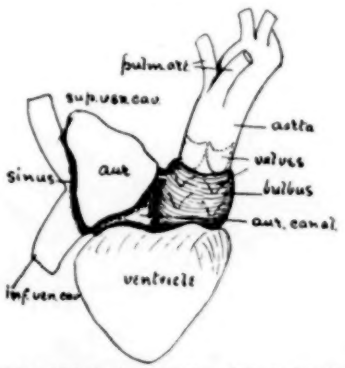
On looking over the specimens of rupture of the left ventricle in the London Hospital College Museum I found they were of two distinct classes—one due to a localised thrombosis of the coronary artery which may occur at any point, the other class being greatly dilated hearts in which the rupture had occurred at the apical vortex. The region of the apical vortex is apparently contracted at an early stage of the systole in the healthy heart, otherwise it could not withstand the high systolic pressure, but in greatly dilated hearts it apparently closes later and has to withstand a higher ventricular pressure and hence becomes the seat of rupture.

THE MANNER IN WHICH THE PULMONARY VALVES ARE RENDERED COMPETENT.

It has been shown that there is still a remnant of the musculature of the sinus venosus in the right auricle of man but there is also a remnant round the base of the pulmonary artery of the musculature of that fourth chamber of the heart known as the bulbus arteriosus. In Fig. 18 is shown the bulbus arteriosus of a child who lived for some weeks which is in every way similar to that found in many fishes. The circular muscle fibres surround the common aortic stem in which the pulmonary artery and aorta are still unseparated, and within the bulbus are rows of valves with three well-marked semilunar valves at the summit (Fig. 18). Normally, the bulbus arteriosus is divided to form the roots of the aorta and pulmonary artery, but while its musculature, as shown in Borns's models, disappears from the aorta it remains as loops which encircle the terminal part of the infundibulum of the right ventricle and take their fixed origin from the base of the aorta. In all vertebrates the competency of the semilunar valves depends on this musculature.

The great development of the bulbus arteriosus in gill-breathing vertebrates is due to the peculiar nature of their circulation. The heart is primarily a respiratory pump; the ventricle throws its load into the short aorta leading to the gills. To be able to receive the ventricular load and to force it onwards, that vessel is endowed with enormous elasticity so that no valves situated within it could be mechanically competent were they not furnished with a muscular or elastic support, such as is provided by the bulbus arteriosus. The musculature of the bulbus like that of the aorta is always in action but most so in *diastole* of the ventricle. In every way the pulmonary artery resembles the short gill

FIG. 18.



Heart of a child showing retention of the bulbus arteriosus (from a specimen in the London Hospital Medical College Museum).

aorta of fishes of which it is the functional representative in air-breathing vertebrates. The elasticity of the aorta has a definite limit; once the pressure is raised to from 120 to 130 mm. Hg the physiological limits of its expansibility are reached, but with the pulmonary artery it is different; it goes on increasing in size with every increment of pressure up to about 60 mm. Hg. The elasticity of the pulmonary artery becomes partially lost in emphysema. The pulmonary artery of amphibious mammals is enormous and capable of storing up many ventricular discharges. Dr. E. A. Gibson proved years ago that the pulmonary valves of the human heart received their competency from the musculature of the infundibulum.[2] The fibres of the bulbus arteriosus in lower vertebrates are not truly discharging but regulating fibres that maintain their tonicity when the true fibres of the ventricle have passed into a state of diastole. As far as one can tell with the naked eye this seems to be also the case in the mammalian heart. They probably play a part in the much discussed question of functional systolic bruits at the pulmonary orifice. When the right heart is distended the circular fibres round the base of the pulmonary artery form a functional stricture at the commencement of ventricular systole between the infundibulum and greatly dilated artery and are a factor which must be considered in explaining the production of pulmonary systolic bruits.

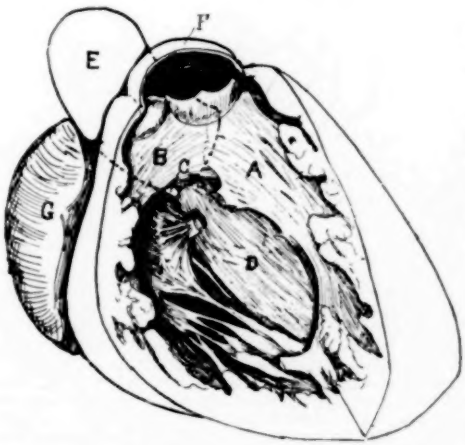
THE CLOSURE OF THE INTERVENTRICULAR FORAMEN.

In cases of congenital pulmonary stenosis, the commonest of all congenital diseases of the heart, or in those where the infundibular part of the right ventricle has never been functionally opened up, the interventricular foramen stands widely open. In birds and mammals it becomes closed whenever the foramen ovale is opened up. In the human embryo it is closed early in the second month, its disappearance being due to the development of a great band of musculature which is characteristic of the mammalian right ventricle and of which no notice has been taken (Fig. 19, B.). The relationship of this band to the interventricular foramen, or, rather to the membranous space which marks the position of that opening, is shown in Fig. 19. When the septal wall of the infundibulum of the right ventricle is examined there will be observed a raised wide flat band of muscular fibres which end in the base of the aorta (Fig. 19, A). That band is well known in the reptilia in which it is attached above to the septum between the orifices of the aorta and pulmonary artery. In a manner which need not be described it separates the arterial from the venous blood during systole of the reptilian ventricles. The great muscular band which first appears in the mammalian ventricle is shown cut across near its origin in Fig. 19, B. It is part of the inner system of the musculature of

[2] E. A. Gibson: Diseases of the Heart and Aorta, 1898.

the right ventricle which bends inwards to reach the base of the aorta and fuses at its origin with the flat band on the infundibular septum (Fig. 19, A). From that origin it proceeds on the lateral wall of the right ventricle towards the right border of the heart, but its main branches run along the base of the ventricle, on the lateral margin of the

FIG. 19.



Right ventricle laid open to show A, a band on the septum corresponding to the pulmono-aortic band of reptiles. B, The great basal band which rises from the root of the aorta. C, The interventricular foramen. D, Septal wall of the right ventricle. E, Aorta. F, Pulmonary artery.

right auriculo-ventricular orifice. In systole of the ventricle it helps to draw the lateral against the septal wall of the ventricle and forms a part of the safety-valve mechanism of the tricuspid orifice. The relationship of this band to the interventricular orifice will be observed. In systole the margin of the band falls right across the opening and closes it. In abnormal hearts showing congenital pulmonary stenosis this band is either absent or it has failed to join the septal band.

In conclusion, I should like to say that I have sought to show that the Hunterian method of using structure to interpret function and of using physiological knowledge to interpret structure is the most profitable of anatomical methods. If much advantage has followed the complete separation of anatomy and physiology much harm has also been done by this divorce which can only be remedied by a restoration of former relationships. No description of the anatomy of the heart can be considered satisfactory unless it can show the meaning of the structure of that organ. The key to the form and arrangement of the parts of the heart is a proper understanding of a wide principle which affects all mammalian hearts—namely, that they are so constructed that the ventricular systole may be utilised to fill the auricles.

TROPICAL DISEASES.—At a meeting of the West India Committee held at 15, Seething-lane, E.C., on March 8th, the Duke of Marlborough presiding, a paper on the Disease Problem in the West Indies was read by Sir Patrick Manson who said that the list of West Indian diseases included all the diseases of Europe with some two or three dozen tropical diseases. He suggested that a well-equipped laboratory with an able and experienced director with suitable assistance should be established at some central and otherwise suitable point in the West Indies and also that every boy and girl in every school in the West Indian colonies should be taught the leading facts on which a rational system of tropical sanitation might be founded. All that was required was a short course of instruction to the teachers, together with a few diagrams and two or three additional pages in the current school-books. He felt sure that if these suggestions were carried out incalculable benefit would result to the West Indies in a few years.

Presidential Address
ON
THE CONGENITAL ORIGIN OF HERNIA.

Delivered before the Medical Society of Victoria, Australia, on Jan. 6th, 1904.

BY R. HAMILTON RUSSELL, F.R.C.S. ENG.,
SURGEON TO THE ALFRED HOSPITAL, MELBOURNE.

GENTLEMEN,—Considerable latitude is by custom accorded to the retiring president in his choice of a subject for the annual address. I propose to deal with a subject which I would entitle "The Congenital Origin of Hernia" and as it is my intention that this address shall fall into series with various papers that I have published on the subject of hernia during the last five years I must ask your permission very briefly to epitomise the views I have already expressed on the subject. At the Brisbane Congress of 1899 in a paper on the Etiology and Treatment of Inguinal Hernia in the Young[1] the following conclusions were arrived at: 1. Oblique inguinal hernia is invariably caused by the presence of a congenital sac which in the vast majority of cases is provided by patency of the whole or a portion of the processus vaginalis. 2. There is no evidence in favour of the view that congenital weakness of the abdominal wall in the inguinal region is a factor in the causation of inguinal hernia. 3. While actual weakness of the abdominal wall in the inguinal region is frequently met with and may be an occasional cause of recurrence after operation, such weakness is not congenital but is an acquired weakness due to the existence of the hernia during a lengthened period. 4. Complete removal of the sac when performed before the abdominal wall has sustained such damage will not be followed by recurrence; it is furthermore the only treatment which is in the true sense curative. 5. It follows from the foregoing that the use of a truss (except in the case of very young infants) is an improper method of treatment and that the only permissible course to advocate for every case of hernia in a child is operative removal of the sac—the sole cause of the hernia.

Three years later, at the Hobart Congress of 1902, I was enabled to produce a great weight of evidence, short, perhaps, of being quite conclusive, in favour of the congenital origin of femoral hernia;[2] I then felt that with a little close scrutiny we might possibly gain some information as to direct inguinal hernia, that would at once resolve our doubts and enable us to place it in the same category with the oblique inguinal and the femoral varieties and regard it as being due to the presence of a congenital sac internal to the epigastric artery. This expectation has been at least partly realised, for I have here this evening a specimen, for which I am indebted to Professor Allen, of a direct inguinal sac associated with an open process on the same side which was taken from the body of a man who had never been the subject of hernia. My own belief is that such a pouch would be found to be always antecedent to the occurrence of direct hernia. I will supplement the evidence I adduced at the Hobart Congress of 1902 in favour of the congenital origin of femoral hernia by some additional facts which will render it impossible any longer to regard it as other than absolutely conclusively proved. My method of investigation has been exceedingly simple; it has consisted merely in looking at hernial sacs after their removal by operation and I purpose to narrate in detail the appearances observed which seem to me to afford instructive information as to the nature and origin of the sacs in question.

We will take first as an object lesson the case of a boy, aged nine years, with a somewhat large hydrocele of the cord on the left side, who came under my care at the Children's Hospital in May, 1900. On close examination I found that I was able to diminish the volume of the swelling somewhat by manipulation and I concluded that there must be a small opening of communication with the

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[1] THE LANCET, Nov. 18th, 1899, p. 1353.
[2] THE LANCET, May 31st, 1902, p. 1519.

general peritoneal cavity. I removed the sac of the hydrocele and on examining the specimen which is depicted in Fig. 1 this is what I found. Above there was an exceedingly narrow communication with the abdominal peritoneum through which the peritoneal fluid was enabled to percolate but far too small to permit the escape of any portion of bowel. The remarkable sacculated outline of the bag should be noted and also that one of the sacculations has become completely closed over, forming a cyst. The whole sac is, of course, obviously congenital; it is a portion of the funicular

FIG. 1.

Sac of hydrocele showing sacculation.

process. The sacculations are also obviously congenital, for it can hardly be suggested that they could have been caused by pressure from within even were the cyst not present to give an absolute denial to such a view. It is rare to find an inguinal sac with this secondary sacculation so well marked but it is still more rare to find one without some more or less distinct diverticula. Sometimes inspection will reveal only one or two irregular contractions of the serous surface. On the other hand, the sacculation, either single or multiple, may assume any form, occupy any position, and be of any size.

I have selected this case for consideration in the first instance because it is free from certain factors that might have become the subject of debate and doubt in a case in which hernia had been present. It is impossible to over-estimate the importance of this observation as to the liability of the congenital sac to display a certain amount of sacculation. You are perhaps a little puzzled at my insistence on this point, for I am not aware that attention has been called to it at all prominently before this evening. It is true that these appearances have been noted and occasionally alluded to, but the real significance and the far-reaching influence of this secondary sacculation do not seem to have occurred to observers who have usually ascribed it quite erroneously to the results of localised inflammation. Nevertheless, it is not merely of fundamental importance to the correct understanding of hernia, it is the very alphabet of the subject. For just as we have already seen that the cause of hernia is the presence of a sac, so I shall endeavour to show that all the multitudinous varieties of inguinal hernia owe their origin to corresponding varieties of sacculation of the sac. This being so, it becomes a matter of great importance to inquire as to the cause of this sacculation, and in order to do this we must go back to the embryological period at which the sac is formed. Further, for reasons that will appear, we shall do well in the first instance to direct our attention to the study of the femoral sac, from which we shall gather information which will enable us the more readily to fathom the somewhat intricate problems associated with the varieties of inguinal hernia. At an early period of embryonic development the three primary layers of the embryo become arranged in the manner depicted diagrammatically in Fig. 2. Ventrally two main layers are formed, the splanchnopleure closing in the primitive alimentary canal and the somatopleure constituting the body wall. Between these two layers is situate the primitive pleuro-peritoneal cavity lined throughout with mesodermic tissue, on the inner surface of which a layer of cells, flattened and stratified, will ultimately become specialised as the endothelial structure of the peritoneum. During the second month bud-like projections are extruded from the surface of the body wall which are the rudiments of the four limbs. These buds are projections of the whole thickness of the body wall and it may quite probably be a normal event for a pouch of peritoneum to be included in the bud (Fig. 2, D) to become subsequently obliterated. Whether this inclusion of a pouch of peritoneum is a normal event or whether it is a developmental accident matters not at all. That which does concern us is the fact that such a pouch of peritoneum

FIG. 2.

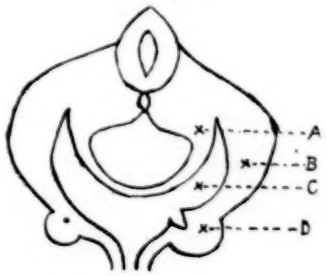


Diagram of embryo. A, Somatopleure. B, Splanchnopleure. C, Primitive pleuro-peritoneal cavity. D, Limb bud with hernial sac.

is not only often formed but that it often persists; further, that it may occur in more than one situation in the limb but that its most frequent seat is in the immediate vicinity of the main vessels and is the future crural canal. This peritoneal pouch having been formed at a very early period it becomes a matter of extreme interest to trace its destiny and to see how it will fare during the period of rapid changes associated with the developing limb. There is a method of studying the finer processes of embryonic development which is peculiarly helpful to us in this matter, for it must be confessed that the knowledge we are enabled to gather from the skilled examination of embryos at varying periods would unaided be of scarcely sufficiently fine texture to enable us to predict the probable future of so minute an embryological structure as this peritoneal sac. Such knowledge may, however, sometimes be usefully supplemented by a process of inductive reasoning from observation of the distribution of blood-vessels and nerves. I need not elaborate this principle here, as I have already drawn attention to it in a previous article,[3] but I will at once invite your attention to a consideration of the branches of the common femoral artery which run upwards on to the abdominal wall, the superficial epigastric and circumflex iliac vessels, and the superior and inferior external pudics. The explanation of the somewhat retrograde course pursued by these little vessels becomes very evident if we refer to the first beginnings of a vascular system in the embryonic limb bud. The first branches that are given off from the main vessel of the limb bud will be apportioned to structures that are destined to form part of the abdominal wall, so that when in the course of development the groin becomes deepened and the limb undergoes changes that are to fit it to straighten out it will at once be seen how it comes about that the superficial epigastric artery and its fellows follow the course they do. A little twig passing directly upwards will ultimately become the superficial epigastric, another with a slightly outward tendency will become the circumflex iliac, and one or two passing somewhat inwards the external pudics.

And now that we have arrived at a conclusion as to the causes that have determined the course of the branches of the common femoral it would seem reasonable to expect that a contemporaneous peritoneal sac occupying a similar position in the evolving limb should in response to the same developmental influences incur a like fate, so that a sac which is of sufficient length and suitably disposed at its inception would assume a position similar to that of the epigastric artery; another in like manner will display an outward and upward direction like the circumflex iliac, while yet another will follow a course corresponding to that of the external pudics; and this is exactly what we find. It is impossible to look at Fig. 3, which represents the branches of the femoral artery on one side and the favourite positions assumed by femoral sacs on the other, without being impressed with the conviction that the developmental influences which determine the course of the arteries on the one hand and the position of the hernial sacs

[3] Ibid.

on the other are identical. The three upper sacs depicted in Fig. 3 have all come under my personal observation during the last three years. I venture to assert that any material enlargement of a femoral sac as the result of the presence of hernia is impossible and I would also venture to formulate the following

FIG. 3.

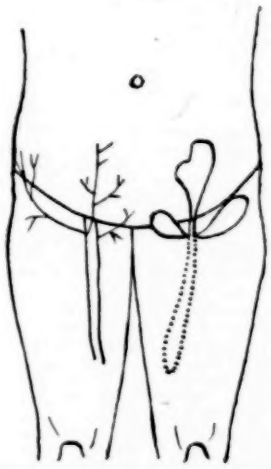


Diagram showing on the right side the femoral artery and its branches and on the left side the favourite seats of femoral sacs. That shown passing downwards is extremely rare (see Macready, Treatise on Ruptures).

law of hernia—viz., *the variations observed in the clinical manifestations of hernia are mainly determined by the size and position of the sac.*

[Mr. Russell went on to say that even in small femoral sacs there was evidence of their congenital origin. He continued:]

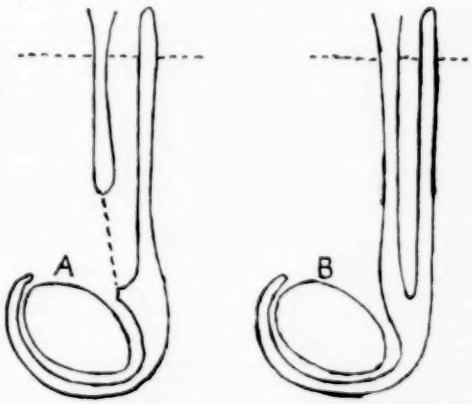
I shall have to refer to the relationship between the course of the blood-vessels in the fully formed body and the processes of embryological development which determined their disposition. A similar relationship must, of course, exist between the branches which, by repeated multiplication, dwindle to the smallest arterial ramifications and the evolutions of the parts to which they are distributed; only here the processes in question become too rapid and too minute for detection by the eye of embryological research, so that the vascular arrangements supply the only available record we possess of their nature. Now, it would be remarkable if these mesodermic evolutions, which are finally mapped out for us in the tortuosities of the arterial branches, should leave no mark upon the sac which is subject to the same vicissitudes, and we should expect to find some permanent record of their incidence in the shape of irregularities of the sac wall or sacculi. Here, again, our expectations have been abundantly realised. Of all the femoral sacs that I have removed during the last three years in every one has secondary sacculation been not merely evident but exceedingly marked; I should be interested to see a femoral sac devoid of sacculation of this kind. This evidence appears to me to be quite conclusive, but I would point out that apart from these various points that I have alluded to the mere inspection of the tissue of a femoral sac with eyes that are alert would convince us that it is a congenital structure. It is a thick structure lined, it is true, with endothelium continuous with that of the peritoneum but comprising in addition a quantity of involuntary muscle, fibrous tissue, and fat. In fact, I have no hesitation in saying that if we merely look at an ordinary femoral sac now that these various features of it have been pointed out we shall only wonder that the truth about femoral hernia should have lain hidden so long and that it should ever have been thought that femoral hernia was an acquired form of the affection.

I turn now to a branch of the subject which surpasses in interest that which we have been considering and enter upon an examination of the different varieties of inguinal hernia. Of these there are a whole cluster of which the great majority (all excepting one, in fact) are produced by developmental variations in the formation of the processus vaginalis. I have classified the varieties of inguinal hernia in the accompanying table and you will notice that under the heading of funicular varieties of hernia I place the commoner oblique forms and in addition the infantile, interstitial, and properitoneal forms.

Congenital inguinal hernia.	Funicular.	Simple—total and partial funicular hernia.
		Sacculated—interstitial, properitoneal, and infantile.
	Non-funicular—direct inguinal hernia.	
Acquired inguinal hernia.	Probably not existent (? direct hernia *sometimes*).	

In order to understand how these numerous varieties of inguinal hernia take their origin it becomes necessary to cast back once more to the developmental period. The events which result in the formation of the processus vaginalis have not been observed with any exactness but certain things are abundantly evident and these are sufficient for our practical purposes. The chief one is that in its extension from the primitive pleuro-peritoneal cavity to the scrotum the funicular process is subject to accidents of a special kind. Between the abdominal cavity, on the one hand, and the scrotum on the other it has, as it were, to run the gauntlet of the very actively developing abdominal wall. There is then a liability to the occurrence of a process of sacculation analogous to that about which I have already said a good deal in speaking of femoral hernia and of which the evidences in the inguinal region are most abundant. Here (Fig. 4, A) is diagrammatically represented an interesting

FIG. 4.



A, Diagram of condition found at operation, the hernial sac lying behind the tunica vaginalis. B, Diagram showing developmental condition before processus vaginalis is partly obliterated.

example of the way in which the funicular process is liable to be "caught" by the abdominal wall in the process of development. It is the case of a man on whom I operated for left inguinal hernia in the Alfred Hospital. On making the usual incision in the groin I at once found myself in the tunica vaginalis which was arranged as depicted in the diagram. At one point the descending process of peritoneum had simply been implicated by the muscles of the abdominal wall during development, so that the descent of the testis had caused it to be drawn out into this long bag. On incising the further wall of the tunica vaginalis an ordinary hernial sac was found behind it which was removed in the usual way. How this arrangement has come about as the result of a developmental accident to the processus vaginalis will be readily understood from the diagram. If we mentally restore the portion of the processus vaginalis that has been obliterated so that we see that structure as it was originally it will be at once seen what has occurred (Fig. 4, B). A portion of the descending peritoneal sac has been caught and fixed by the developing abdominal wall and it has so happened that the hung-up portion was at a sufficient distance from the testis to permit of the normal descent of that

organ without interference; thus the testis with the remainder of the processus vaginalis has come down behind the abnormal pouch. It frequently happens, on the other hand, that when this kind of developmental accident occurs the normal descent of the testis is also prevented. In this way is brought about the double pathological condition of an interstitial or properitoneal sac in association with imperfect descent of the testis. I have already pointed out the underlying cause of the correlation of these two conditions in a paper which I read before this society in May, 1900,[4] combating the view that in their association the imperfectly descended testis could be considered in any way as a cause and the interstitial hernia as a result. They are associated results of a common developmental cause and the diverticulum from the main portion of the processus vaginalis which gives the character to the hernia is a congenital sacculation identical in origin and nature with others that we frequently see in the inguinal region and with the sacculation which we have seen to be so constant a feature of the femoral sac. Thus you will see that all the varieties of oblique inguinal hernia receive a ready explanation, although there is one variety which appears in the table and about which I have said nothing but about which a great deal has been written, known as "infantile" hernia. It appears that this is a term used very loosely to cover a variety of different anatomical anomalies and to these there need be, and there is, practically no limit. I suppose the case I have just now detailed to you might by some be classed as a form of infantile hernia, though why "infantile" does not seem very clear, for any other adjective would be equally appropriate as a designation. The varieties of infantile hernia present absolute uniformity in one respect only; they never arise in any of the ways which our ingenuity has ascribed to them For our credit let us abolish the name and find any other that will in some measure indicate what these forms of hernia really are—viz., hernia into irregular sacs, congenital in origin, and formed by variation in the saccular arrangement of the funicular process. Under the heading of "simple (as opposed to sacculated) funicular hernia" you will notice there are placed two varieties—viz., total and partial funicular hernia. "Total funicular" indicates that form which unfortunately is usually called "congenital"; "partial funicular" indicates the form which is usually distinguished as "funicular." These terms were suggested by me as long ago as 1899.[5] A few words will not be out of place here as to the need for such alteration in the accepted terminology of hernia.

The term "congenital" has hitherto occupied a place in the nomenclature of hernia which it acquired falsely and as the result of a misapprehension; in its ordinary acceptation congenital hernia signifies an oblique inguinal hernia into a funicular process which is unobliterated throughout, so that there is no barrier separating the abdominal peritoneum from the tunica vaginalis. This attachment of a term which conveys an important etiological significance to what was at best a mere anatomical condition, reckless as it now appears to us, might have proved harmless enough. It was clearly understood that the term "congenital hernia" was to be taken as meaning not that the hernia was present at birth but that the hernia had entered what was obviously a congenital sac; evidently it was considered that the inguinal hernia in which the sac was found to be distinct from the tunica vaginalis might be safely relegated to the category of acquired hernia, and acquired hernia, as I need hardly remind you, implies that the sac is not a developmental structure and is not therefore present at birth, but that it has been formed by the stretching and pushing down of the normal peritoneum in front of the descending hernia, the essential cause of the hernia in such a case being a local weakness or inadequacy of the abdominal wall. The first foreshadowing of troubles to come might have been felt when it came to be pointed out that hernia descending into an open funicular process need not of necessity find its course to the tunica vaginalis completely unopposed, but that on the contrary it was common for the tunica vaginalis to be cut off from the main length of the tube by an obliterated portion of varying length. Now it is obvious that the upper portion of the partially obliterated funicular process is no whit less entitled to the name of "congenital sac" than is the whole of it, but a distinctive title of some kind was called for; and as the term "congenital" had been already appropriated by the one variety to the exclusion of another whose claim to the title was equal, this latter variety by a transparently artificial arrangement received a title to which it in turn had no more special claim than the first and was called "funicular." In short, it is obvious that both are congenital and both are funicular in exactly equal degree, and this simple plan of satisfying conflicting claims by the diplomatic expedient of an equitable distribution of titles, however admirably it may serve in a world of lesser issues, becomes in the highest degree inconvenient when introduced into the domain of scientific discussion. I cannot illustrate this better than by instancing the difficulty I myself experienced when I first made a communication to this society on inguinal hernia in childhood in which I asserted that the sac was invariably congenital. I had frequently in those days to encounter friendly critics who came to me narrating cases they had met with in respect of which my statement was proved to be erroneous because the sac of the hernia was entirely separate from the tunica vaginalis. I then had to explain that as applied to hernia the term "congenital" has two meanings; of these, one has been injudiciously associated with a distinct anatomical condition—viz., complete patency of the funicular process throughout; the other meaning of the term "congenital" is "congenital," and I personally think that it should retain that significance to the exclusion of any other. It is clear, then, that the time has come for re-editing our nomenclature of hernia and the use of the term "congenital hernia" as denoting a variety distinct from all other forms of hernia must be discontinued. It is with this end in view that I have suggested the substitution of the terms "total funicular" and "partial funicular" for those at present in common usage—viz, congenital and funicular respectively.

In an earlier portion of this paper I remarked that while direct hernia is demonstrably of congenital origin sometimes it is also the only form in which, as it appears to me, the possibility of a truly acquired origin cannot be absolutely eliminated by the evidence at present at our disposal. I have indicated my own opinion, but whether that opinion is right or wrong is a matter of trivial importance. Direct hernia as an individual member of the hernia family is by far the least important and is literally such a very small matter that we can afford practically to disregard it. We will admit that it may possibly be an occasional exception to the fundamental principle the truth of which impresses itself more strongly on my mind as experience and observation accumulate year by year and which it has been the object of this address to aid in establishing—that acquired hernia does not exist; there is absolutely no such thing.

[4] Intercolonial Medical Journal of Australasia, May 20th, 1900. See also THE LANCET, Oct. 20th, 1900, p. 1128.

[5] THE LANCET, Nov. 18th, 1899, p. 1353.

THE AMBULATORY TREATMENT OF FRACTURES OF THE LOWER EXTREMITY BY HOEFFTCKE'S MODIFIED HESSING'S SPLINT CASE APPLIANCE.

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THE sight of a man with a fractured femur walking three days after admission with the aid of one stick is a possibility which is not well known in this country. The splint by which it is accomplished comes from the continent where it has been in use for several years and is now a universally recognised form of treatment. The designer, Hessing, was a village carpenter who started fitting wooden legs to amputation stumps and from that has gone on increasing his business and has devised the splint which now bears his name. He possesses a vast establishment near Augsburg and to-day is a wealthy man. This splint has been in use on the continent for at least ten years. It is useful mainly in two conditions—viz, fractures of the lower extremity and disease of the elbow, hip, or knee, and contractures of the same joints.

The following three cases illustrate what can be done by means of this splint in fractures of the lower extremity.

CASE 1.—The patient, aged 32 years, was admitted to the London Hospital on Sept. 28th, 1903. A stack of cheese had

fallen directly on the right leg. On admission a diagnosis of fractured tibia and fibula was made. A plaster cast was taken and the leg was put up in back and side splints. A radiograph showed transverse fracture of the tibia in the lower third. A fractured fibula was doubtful. On Oct. 2nd Hessing's splint was applied. The patient walked across the ward with a stick. On the 9th there was some swelling of the knee but no pain at the seat of fracture. On the 20th he was discharged from hospital. The knee was allowed free movement. He walked without a stick. On Nov. 5th the splint case was removed. The bone was firmly united. There was no displacement. He had no pain from the day the appliance was put on and returned to work in November.

CASE 2.—The patient on Jan. 28th, 1904, slipped and fell down eight or nine steps. He was carried to hospital one and a quarter miles and was "not absolutely sober" on admission. A radiograph showed the tibia and fibula to be fractured transversely just above the malleoli. The lower fragments and the foot were displaced backwards and the foot was everted. The foot was greatly swollen and there was much extravasation of blood. A plaster cast was taken. On Feb. 1st the leg was much swollen, covered with bullæ, and black. The splint appliance could not be tried on. The leg was put in back and side splints and the foot and ankle were covered with boric powder. On the 8th the splint was applied. The man got out of bed and walked so well without assistance that the knee-joint was allowed to be free. He complained of no pain in the fracture. The great swelling, discolouration, and bullæ which formed on this leg delayed the application of the splint for six days.

CASE 3.—A man, aged 31 years, was admitted to hospital on Feb. 2nd, 1904. Six days previously about six hundredweights of cement fell on to his back and then slid on to his right thigh. He was taken to a cottage hospital and a long splint was applied. The medical attendant was not satisfied and sent him to my wards on the sixth day. The femur was broken at the junction of the middle and lower thirds (see Fig. 1). A plaster cast was taken on the evening of admission

FIG. 1.

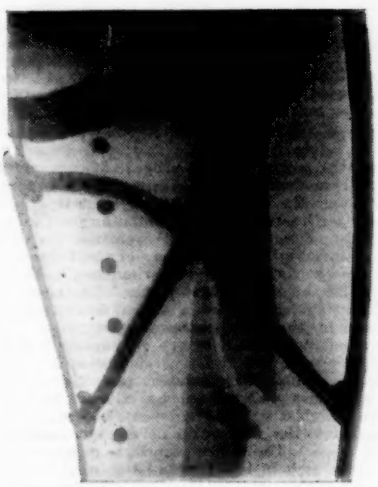

Illustration showing fracture of the femur and steel splints of the appliance.

and a long Liston splint was applied till Feb. 4th, when Hessing's splint was put on and the man walked across the ward on the third day after admission (see Fig. 2). The patient had been up every day since. On the 10th the knee became somewhat swollen but he had no pain in the thigh.

This splint-case appliance consists of four other cases united by steel bands. A casing of stout leather, strengthened with thin steel bands, encircles the thigh from just above the patella to the level of the tuber ischii behind. The leather is open down the front where it is to be laced up when fitted. Numerous holes are punched in it to prevent uncomfortable heat and it is lined with flannel. Along each side are clamped firm adjustable steel supports which serve to transmit the weight of the body from the leather casing to the ground. The weight of the body is transmitted to the leather thigh-casing in two ways: first, the tuber ischii on that side rests on the top of the

FIG. 2.

Patient with a fractured femur walking on the third day after admission.

casing and the steel bands are arranged to meet this pressure; and secondly, the casing is very accurately fitted to the thigh so that the latter fits into it like one cone into another. In this way no pressure is allowed to fall through the apex of the inner cone—viz., the lower end of the broken femur. To the foot is fitted a steel sole-piece with a strong upright on each side from two to three inches in length, which is jointed to the lower ends of the lateral supports from the thigh-piece. The casing seen in the illustration fitted to the leg is not part of the apparatus for transmitting the weight of the body to the ground but is for keeping the ends of the bone in apposition where the tibia and fibula are broken. It is similar to the thigh casing, made of stout leather, strengthened if necessary by thin steel bands riveted in, lined with flannel, and punched to allow of ventilation. It accurately fits the curves of the leg and is laced down the front, so that in the case of any diminution in size from disappearance of swelling or slight atrophy of muscles the casing may still fit closely. This leg casing is adjustable up and down the lateral supports and also to some extent forwards and backwards. If extension be desirable an anklet is provided to which are attached three pairs of strong tapes fastening beneath the steel sole-piece.

The following is the method of manufacture. As soon after admission as possible a plaster cast is taken of the thigh, the leg, and the foot. In order to identify the various points on the cast a line is drawn with a copying-ink pencil up the whole length of the leg anteriorly and laterally. The positions of the knee and ankle joints are also marked out. The leg is then coated with oil and the plaster bandages are applied. The foot must be kept at a right angle. The plaster must be good and set quickly and the bandages must be of thin texture so as to fit smoothly and evenly

They are not applied tightly but merely laid on so as to get the exact size of the limb. The cast is removed while still wet. The best plan of removal of the outside plaster cast is to split it down the front by a vertical incision slightly to the outer side and then horizontally across the front of the ankle-joint. The edges are then fitted together again, the incision thus being closed, and the whole is consolidated by a final plaster of Paris bandage applied after removal. The cast thus taken should be about a quarter of an inch thick. From the cast a model is made in solid plaster and on this the leather casings are modelled. It is impossible, of course, to mould dry leather on the plaster so that it will keep its shape, but the difficulty is surmounted by soaking the leather in water. The only difficulty I have met with in this country is getting suitable leather. English leather does not seem to be nearly so pliable on soaking or to set so well on drying as the continental leather.

In order to make sure that the leather casings are strong enough, especially in the case of adults, thin steel bands are imbedded in the leather. These bands are first fastened securely on the plaster model, then on moulding the leather above them they leave an impress on the casing, so that on removal the bands may be riveted in their exact position in the leather. One band must always strengthen the thigh-piece below the tuber ischii. The holes for the escape of perspiration are punched from within out. The lateral supports are jointed at the knee but the joint is fitted with a peg screw, so that, if desirable, it may be immobilised.

By means of this splint the patient in nearly every case of fracture of the leg can be made to walk, with or without the aid of a stick, at the end of a week. Case 2 was one of the worst cases of Pott's fracture it was possible to meet, where the swelling and ecchymosis were so great that the posterior surface of the limb is still ecchymosed as high as the middle of the thigh now a month after his accident. If this splint can be applied to so severe a case of fracture any case can be treated with it. The bone is united well and the patient's joints, knee and ankle, are no longer stiff, as they would have been had they been kept at rest during the whole time he was in bed with a splint on or had plaster of Paris been applied to the limb. The advantage of this splint, in enabling a man to get up out of bed, to walk about, and even to go to business at the end of a week or ten days, must be very obvious. In cases of fracture of the femur also in old people where it is essential that they should not be kept in the recumbent position with a long splint on, this appliance will enable them to be got out of bed, and the tendency to hypostatic congestion of the lungs and bed-sore is thereby counteracted. The case of fractured femur shown above was one of fracture of the middle of the thigh bone, but this splint is also applicable to fractures of the lower and upper extremities of the femur. This splint was made for me by Mr. Hoefftcke, 21, Woodstock-street, London, W., who has modified and considerably improved Hessing's appliance.

Wimpole-street, W.

AN INQUIRY INTO THE SOURCE OF SCARLATINAL INFECTION AND ITS BEARING UPON HOSPITAL TREATMENT.[1]

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MY first duty is to thank you for this opportunity of bringing before the Southampton Medical Society for its serious consideration a subject of much medical and public importance. The conclusions at which I have arrived are not altogether in accordance with those usually accepted and as a public official I look upon this society as the only competent tribunal in the borough to discuss and to decide the points at issue. As, moreover, the patients of everyone here form the basis of my remarks and deductions you will further be able to express an opinion as to the accuracy of the statistics and details I place before you. To this end I have sent to each medical practitioner a list of the cases notified by him during the past year and marked those which had been discharged from the isolation hospital and considered responsible for "return" cases. Gentlemen also who have notified cases of scarlet fever and are not members of this society have been invited to attend and if unable to do so have been asked to communicate any observations they might desire to make on cases which have been discharged from hospital and which are likely to be considered responsible for "return" cases.

The value of isolation hospitals from a public health point of view has recently been a subject of discussion both in the medical press and at the conferences of medical officers of health, and while it is true our knowledge of the infective process is not such as to preclude the possibility of mistakes, yet the observations of those controlling large hospitals and areas must help towards the solution of the problem. The difficulties of an isolation hospital present themselves, by universal opinion, very especially in scarlet fever wards. It is about scarlet fever that the greatest uncertainty exists and this uncertainty has led some experienced officers to demand the abolition of centred hospitals. In making this demand, however, a very important question has been largely ignored—viz., the question of internal administration. Before we can decide whether isolation hospitals are a failure or not we must ask ourselves whether our administration is such that the isolation principle has been properly tested.

In February last I altered my methods of administration and I propose now to sketch shortly the new procedure adopted, with the results obtained since that date. Our isolation hospital is for the use of the whole area of Southampton, in addition to being a refuge for the port sanitary authority, and during the past 12 months a sufficient number of cases of scarlet fever has been admitted and discharged to form a reasonable judgment of the value of the altered methods. The new methods are due to a firm belief, based on observation, that more classification and more segregation are essential and, moreover, that "return" cases are attributable not to the peeling condition, as is generally contended, but mainly to undetected discharges from the respiratory passages and ears in those who have left the hospital. The value of ordinary personal observation in arriving at this belief is enhanced when we bring into review our want of knowledge of the specific organisms and our present ignorance of where and when infection ceases. My observations, extending over a wide range of cases, have led me to regard the upper respiratory passages, particularly the naso-pharynx and the pharyngeal and faucial tonsils, as responsible for the reception and propagation of the infection.

It is not the purpose of this paper to discuss questions of pathological anatomy but a review of the anatomical peculiarities of the upper respiratory tract is essential in considering the feasibility of my contentions. The structure of this region, moreover, shows the possibilities that exist of long-continued infection and may of itself throw light on this obscure problem. I presume, therefore, to remind you very briefly of the more salient points. The nasal passages in the living subject present a very different picture from that viewed in the bony framework, owing to the thick mucous membrane which covers it, causing a narrowing of the openings of the different sinuses and nasal duct. The mucous membrane is thickest over the middle and inferior turbinates and covered by ciliated columnar epithelium with goblet cells on a delicate basement membrane and extends into the various air cells, communicating with the nasal fossæ. The tunica propria is composed of white fibrous tissue, rich in leucocytes and traversed by a venous plexus. Numerous compound racemose mucous glands open on the surface and between them there is much lymphoid tissue sometimes accumulated into nodules. In the air cells the tunica propria is very thin and sparingly supplied with glands. The following sinuses communicate more or less directly with the nose: the antrum, the frontal sinus, the anterior, middle, and posterior ethmoidal and sphenoidal cells, as well as the nasal duct, while the Eustachian tube connects the naso-pharynx with the middle ear. The patency of all these communications depends for our purpose on a healthy condition of the mucous membrane. The mucous membrane lining the accessory sinuses is thin and pale and, with the exception of the frontal sinus, the drainage of these cavities, owing to their openings not being placed near the bottom, depends on the healthy and efficient ciliary action of their epithelium.

[1] A paper read as the annual address before the Southampton Medical Society on Jan. 20th, 1904.

The naso- and oro-pharynx, including the tonsils, present points of first importance. Here, again, the mucous membrane is rich in lymphoid tissue; particularly is this so at the vault and across the back of the pharynx on a level with the hard palate where it forms the pharyngeal tonsils. The mucous glands are very numerous and the surface down to the level of the hard palate is covered with columnar ciliated epithelium. The faucial tonsils are substantially masses of lymph nodules with numerous irregular depressions, into the bottom of which mucous glands open. We have here an extensive surface of glandular tissue richly supplied with vascular and lymphatic vessels, the main functions—outside the special senses—of the nose and tonsils being to purify, to warm, and to moisten the air inspired. It is not difficult thus to appreciate the possibilities offered by the upper respiratory tract for the reception, cultivation, and dissemination of specific micro organisms.

Independent of adenoids and enlarged tonsils so common in children it is easy to realise how, with our rapidly varying climatic conditions, a modification in the mucous membrane of the upper respiratory tract can be produced suitable for the reception, development, and manifestation of the specific microbe of an infectious disease. Again, the glandular tissues and the accessory sinuses may afford conditions favourable to the continued existence of this specific poison—conditions which may be sometimes difficult or impossible to recognise and at other times, though most apparent, may be most intractable to treat.

In the mildest forms of scarlet fever the mucous membrane of the fauces, the uvula, and the tonsils is injected and slightly swollen, with increased secretion and more or less degeneration and shedding of the epithelium. An increase in the severity of this process may present many phases up to that of ulceration or sloughing. In the very simplest variety one can readily realise that a patient who has run a favourable course may be sent from hospital with one or more follicles distended with infective secretion, the virus being probably in an attenuated condition, which, under conditions such as catarrh, may discharge and infect a surface ripe for its cultivation, often leading to rhinorrhœa or middle-ear disease and invariably causing a "return" case. In the more severe cases accompanied by marked proliferation of adenoid tissue and altered secretions the probability of spreading infection is recognised not only while discharges continue but for a considerable period after they have ceased, being in proportion to the abnormal conditions set up in the mucous membrane and the implication of the tonsils and accessory sinuses.

The fact that prolonged stay in hospital or the absence of desquamation does not assist in preventing "return" cases gives support to the potentialities of the upper respiratory tract as being the focus of infection. This is indicated by the following clinical observations. 1. The class—young persons—which is most susceptible to scarlet fever is also most subject to abnormal conditions of the tissues of the naso-pharynx and the tonsillar region. These tissues, consisting as they do of a large amount of lymphoid tissues with involutions of the mucous membrane, offer a most favourable nidus. 2. The period of incubation is short and the changes in the mucous membrane of the upper respiratory tract appear early. 3. Evidence of infection following operation on the upper respiratory tract. 4. The constitutional symptoms and fever are, as a rule, in proportion to the condition of the respiratory passages. 5. The great majority of "return" cases is associated with discharges coming from the upper respiratory passages and ears. 6 Enlarged glands are in proportion to the crowding of the ward and the introduction of fresh acute cases.

Previously to February of last year the method employed here was that I believe in almost universal practice, of treating all cases in the general wards until such time as peeling and discharges had ceased. Patients were then disinfected by being passed in the ordinary way through the out-bathing station. Under this system complications of the fever in our wards were both common and obstinate. Nor is it difficult to postulate a reason for this. In such conditions the respiratory passages, healthy or otherwise, were kept continually within a zone of active infection, an infection, moreover, not necessarily confined to that peculiar to scarlet fever. The method now adopted aims at the protection of mild and convalescent cases by segregating them from those which are received in an acute state or are suffering from discharges. These mild and convalescent cases are thus, as far as possible, guarded against reinfection and their respiratory passages are assisted to free themselves naturally from the organisms of infection.

The following is a brief account of the methods adopted in our hospital. The cases are brought to the hospital from only one house at a time. On arrival each patient is examined before removal from the ambulance by the resident medical officer and a swab is taken from the throat for bacteriological examination. Doubtful cases are put into an observation ward and detained or sent home according to whether scarlet fever is found to be present or absent, the ward being disinfected immediately after their removal. Undoubted cases of scarlet fever are put into an "acute room" and kept there until the acute stage of the disease has passed and a bacteriological examination of the swab has excluded diphtheria. They are then removed into the general ward where the recent cases are kept apart from those that are convalescent. These precautions are taken even with the mildest cases. If at any time aural or nasal discharges, enlarged tonsils, glands, &c., develop the patient is removed from the general ward to a pavilion or block reserved for such complications. At the end of the third week of the disease, if free from complications, the patients are transferred from the general ward to another pavilion which has been thoroughly disinfected and to which no cases are admitted except through the out-bathing station with the same precautions as if they were being discharged from hospital. They are kept in this pavilion apart from all other patients for one week, the nose, ears, and throat being carefully douched with a disinfectant each evening after bathing. At the end of the week—that is, the end of the fourth week of the disease—they are discharged from hospital after again passing through the out-bathing station, no matter what the condition with regard to the peeling may be. After their discharge no patients are admitted into the same pavilion until it has been thoroughly disinfected. The general wards are thoroughly disinfected at least once a month or as indicated by the condition of the patients. These methods have not only comparatively freed us from the occurrence of albuminuria, enlarged glands, discharges from the nose and ears, &c., in the patients, but have reduced the duration of fever and the period during which they had to be kept in bed, and left us during the year without a single case of post-scarlatinal diphtheria or relapse. Further benefit would, I believe, result from the complete and continued separation of each individual case.

I wish now to put before you in tabular form the results of carrying out the methods I have shortly described. The cases dealt with in the tables I lay before you have, as I have already mentioned, been submitted to each medical practitioner who notified. In this way each member has it in his power to challenge, if he has any grounds for doing so, the accuracy of the figures. The statistics of results obtained under the different methods are given in Table I. During 1902 no cases were discharged from hospital until all peeling had ceased, but during 1903 I have acted on the belief that the infection is in the respiratory tract, that the constitutional condition and particularly the rash are only the result of toxic products, and that therefore the desquamation of skin is not *per se* a source of danger.

TABLE I.

Year.	Cases notified.	Removed to hospital.	Discharged from hospital.	Average period in hospital (days).	Number causing "return" cases.	Cases treated at home.
1902 ...	261	208	164	48	7	53
1903 ...	427	353	325	34	7	74

In Table I. a contrast under various headings of the work of 1902 and 1903 will be found. You will notice at once that the total number notified in 1903 exceeds that of 1902 by 166; you will further observe that in 1902 the average period of detention in hospital was 48 days, while in 1903 it was 34 days—a reduction of 14 days. Notwithstanding this reduction in the period of hospital treatment the number causing "return" cases is in each period the same—viz., seven—and this works out in 1902 as 4·27 per cent. and in

1903 as 2·15 per cent. So that the percentage after 48 days' treatment was greater considerably than the percentage after 34 days, showing clearly, as far as statistics for such a period can show, that the longer period of detention with the associated causes did not remove, but rather increased, the possibility of the patient carrying away infection.

In Table II. a further analysis of the 325 cases discharged from the hospital during the year will be found:—

TABLE II.

—	Discharged.	Average duration in hospital (days).	Number causing "return" cases.
1. Without peeling or complications	33	33	0
2. Peeling without complications	204	28	2
3. Cases with complications ...	88	50	5
Total	325	34	7

I have arranged this table so as to illustrate the length of time each class was detained in hospital and also the number in each group that could possibly be held responsible for "return" cases. In the first group, limited to 33, and dismissed after 33 days' residence, without either peeling or complications, we received no "return" cases. The second group—those peeling but without complications—includes the great majority of cases treated. There were 204 in this group dismissed after an average of 28 days' treatment. None of those 204 had suffered from complications during their stay in hospital and at the time of their leaving no symptoms of any discharge were apparent. This large class was responsible for two patients to whom "return" cases were due. The details of these cases I will submit further on. The third group, in which complications of various kinds had occurred, numbered 88. These were detained an average of 50 days in hospital. This group produced the largest number of "return" cases—five—the particulars of which I will also submit to you. The second class of cases in the table—204 in number—were followed to their homes, being visited there daily for ten days. This method was adopted so as to preclude the slightest possibility of even a mild case occurring without detection. The conditions, also, to which these patients returned were carefully investigated, as their surroundings had considerable bearing on the probable spread of infection. Few, if any, of the cases could have been satisfactorily isolated at their own homes. The statistics show that the 204 cases returned to 180 houses. These houses had an average accommodation of five or six rooms and contained 744 persons who had never suffered from scarlet fever. Of these, 363 persons were under 15 years of age, 36 were between 15 and 18 years, and the remainder—or 345—were over 18 years. If, therefore, peeling *per se* were infectious these 204 cases returned to the very conditions under which the infection was likely to spread. Of the "return" cases notified the following are the details of the two in Group 2 of Table II.

CASE 1.—The patient, a girl, aged eight years, was discharged after 29 days' treatment and while still peeling. Eight days after leaving the hospital she was found to be suffering from a discharge from the nose. A brother and sister of the patient developed all the symptoms of scarlet fever five days later—i.e., on the thirteenth day after the patient had left hospital. In this case it is probable that the specific organism still remained in an attenuated condition and was rekindled into activity by the condition causing the catarrh.

CASE 2.—The patient, a girl, aged three years, was discharged after 24 days' isolation, peeling. A sister developed scarlet fever three days later. The former case received seven days' special treatment in the same room as another patient who had suffered from discharges until three days before admission into the special ward. In this case probably the specific organisms remained in unhealthy tissues which ceased to give outward evidence of their presence.

So that in the two cases of this group responsible for "return" cases there were other possible sources of infection present, and considering the total number—204—followed by only two "return" cases it is not illogical or unreasonable to say that the desquamation played no part in the result. Of the five "return" cases under Class 3 of Table II. the following briefly are the details.

CASE 3.—The patient, aged four years, was in hospital 54 days; no peeling on discharge. Suffered from nasal and aural discharges; nasal discharge returned on the day after leaving hospital. A servant was notified as suffering from scarlet fever ten days after the patient's return home.

CASE 4.—The patient, aged six years, was in hospital 44 days; no peeling or discharge on leaving hospital; had had aural discharge. A brother was notified seven days after the patient's return home.

CASE 5.—The patient, aged seven years, was in hospital 31 days; peeling; had watery discharge from the nose. A brother was notified as suffering from scarlet fever eight days after the patient's return home.

CASE 6.—The patient, aged four years, was in hospital 31 days; peeling on feet; no discharge; had had discharge from the ears and the nose which had ceased ten days prior to leaving hospital. A brother was taken ill four days after the patient's return home.

CASE 7.—The patient, aged five years, was in hospital 28 days; peeling on feet; no discharge; tonsils enlarged and nodular condition of pharynx. The patient developed a purulent discharge from the nose two days after leaving hospital. A sister was notified as suffering from scarlet fever 15 days after the patient returned home.

These cases clearly point to the discharges as being the source of infection.

Table III. shows the number of cases treated in hospital and at home and the respective duration of treatment, with mortality.

TABLE III.

—	Number of cases.	Average duration of treatment.	Deaths.	Case mortality (per cent.).
Number discharged from hospital ...	325	34 days.	5	1·5
Cases treated at home	74	38 days.	3	4·1

Table III. is of value in showing that in patients treated at their homes the duration of treatment is much reduced from what it formerly was, the average duration for the hospital being 34 and in private 38 days. The mortality percentage is put down in this table not for the purpose of drawing any comparative conclusions. Such conclusions are undesirable and, moreover, are impossible, inasmuch as necessary factors are wanting. The low percentage mortality in the hospital, however, shows that treatment in centred hospitals is far from deserving a criticism so severe as to justify the statement that isolation hospitals should be abolished.

Such, then, are the main features of a year's work in our scarlet fever wards and I have taken the earliest opportunity of submitting them to you. I have dealt only with my own experiences, leaving out altogether the conclusions and methods of other workers. It is only by so doing and adding gradually to evidence already gathered that the vexed question of infection can be finally settled. I have put before you my contention that the respiratory tract is the source and centre of scarlatinal infection and I have put this contention before you not as a theory only but as a theory which has, I believe, stood the test of practice. If peeling *per se* were infectious then it is almost impossible to conceive how 204 patients discharged from the hospital in a peeling condition failed to be responsible for more than two "return" cases. This failure, moreover, of these patients to infect others was not due to any special condition of the homes and surroundings to which they returned. The conditions which did exist were just such as would put the method to a crucial test. For in nearly all the cases—as you will see by the statistics, each unit of which you must be acquainted with—the discharged patients were located in surroundings which were distinctly favourable to the spread of infection.

Although the primary object of an isolation hospital is the prevention of infection, yet the treatment of the patients is equally important, and I think our hospital records show that the short period of detention with the methods practised is

not prejudicial to complete and early convalescence but rather the reverse. The patient is removed sooner from the infected zone and the risks of the many complications are minimised. Another advantage derived from this system is the increase of our hospital accommodation. This is, of course, a minor consideration, but from the point of view of a public official administering a large and expensive department it is a feature not to be disregarded. Can I not therefore claim that for the interests of public health, for the welfare of the patients, and for the advantage of the ratepayers, the system adopted has proved successful? It was not, I can assure you, without a feeling of considerable anxiety that I commenced to carry out a method so much at variance with the accepted traditions of the profession, but as case after case left the hospital without producing any of the dreaded results I felt to be working on safe grounds. Now, at the end of a year, I invite your opinion of the method employed.

Southampton.

ABSTRACT OF A CONTRIBUTION TO THE STUDY OF THE ACTION OF INDIAN COBRA POISON.[1]

BY R. H. ELLIOT, M.B., B.S. LOND., F.R.C.S. ENG., D.P.H. CANTAB.,
MAJOR, I.M.S.

THIS research[2] was undertaken by Major Elliot, who is on special duty making investigations into snake venom under the orders of the Secretary of State for India, with a view of accurately ascertaining the precise part played by the various important centres, nerves, and organs in the production of death from cobraism. After detailing the work of previous investigators and the methods employed in his researches Major Elliot came to the following summary of conclusions:—

1. Cobra venom acts directly on the muscular tissue of the blood-vessels or through their vasc-motor nerve endings, constricting the arterioles and thus raising the arterial blood pressure. It probably affects all organs alike. In the frog vessels the action can be traced down to dilutions of 1 in 10,000,000. In a cobra bitten man the concentration of venom in the blood is probably at least 30 times as great as this.

2. Cobra venom also acts directly on the isolated frog ventricle, killing it in a position of firm systole if the solution be concentrated and stimulating it if a weaker strength be employed. The limit of the speedy lethal action on the isolated heart is reached at a concentration of about 1 in 500 000. The stimulating action can be traced down to a dilution of 1 in 10,000 000. This action of cobra venom brings it into line with the glucosides of the strophanthin group. Its action is more rapid than that of strophanthin and is certainly not inferior to it in strength. Atropin sulphate and cobra venom, when acting in the same solution, intensify each other's action and produce more summation of effect than one would have anticipated. This detracts from the value of the atropin salt in the treatment of cobraism and makes it a dangerous remedy. The blood pressure work has confirmed this view of the case.

3. Cobra venom powerfully affects the isolated mammalian heart when solutions of it are perfused through the coronary circulation. The action appears to be a dual one—viz.: (1) a direct action on the muscular fibre, or on the nerve endings, closely resembling that which is produced on the isolated frog ventricle; and (2) an action on the intracardiac vagal mechanism, which makes for inhibition. The result is that in strong solutions we find an irregular and extreme excitation of the heart, followed by early death in a position of systolic tone. If the concentration be less the early stage of excitement yields to a prolonged phase in which the tonic action of the poison on the heart is most pronounced; the beat is regular, steady, and strong. Cobra venom interferes with the circulation through the heart in a marked manner. This is probably due (1) to a constriction of the coronary vessels, brought about by the direct action of the venom on the vessel walls, and (2) to the condition of tonus into which the heart is tending to pass.

4. When given subcutaneously in low lethal doses cobra venom kills by paralysing the respiratory centre. Such a paralysis is in these circumstances gradually evolved and in the early stages of the process there is often evidence of a phase of stimulation preceding the paretic phase. There is a gradually increasing venosity of the blood and in consequence thereof all the harmful results of slow asphyxiation are produced. If life is prolonged beyond the usual term by artificial respiration, and possibly also if the dose of venom is a very low lethal one which takes many hours to kill, the phrenic and other motor nerve ends may become paralysed, but this is certainly not an essential feature of death from lethal doses of cobra venom which kill within five hours. I hope to make a further communication on this subject later. The convulsions which precede death are purely asphyxial and can be at once stopped by artificial aeration of the blood. Each such convulsion is followed by a phase of exhaustion of the respiratory mechanism which is almost certainly central. If the dose of cobra venom administered be a large one, and especially if it be given intravenously, the respiratory centre is quickly and severely affected and respiration may cease almost at once. This cessation of breathing may be permanent if artificial respiration be not quickly started, but if the dose be a smaller one the rhythmic activity of the centre reasserts itself. At first there may be a number of deep spasmodic gasps and then the movements of respiration re-begin, very gently at the commencement and gaining force as time goes on till a normal rhythm is re-established or even a stage of stimulation is manifested. Soon, however, the centre fails again and all the phenomena of asphyxiation appear. By applying cobra venom directly to the exposed medulla oblongata of the rabbit I have shown that the respiratory centre can be paralysed without the phrenic nerve ends or the heart being appreciably affected. If very large doses of venom are injected death may take place by cardiac failure before the respiratory mechanism has given way. We have here to do with the direct action of the venom on the heart muscle; the beats become rapid and shortened and the heart passes into a systolic phase in which it dies tightly contracted.

5. Cobra venom when given in low lethal doses subcutaneously raises the general blood pressure. There may be a slight preliminary fall before the rise but often this is wanting. In the absence of further interference the blood pressure remains high till very near the end of life. In the asphyxial convulsions which herald death a further steep rise of blood pressure takes place; this is soon followed by a sudden and very rapid fall to death. The high level of blood pressure is due to (1) the direct action of the circulating venom on the muscular tissue of the arterioles, causing a constriction of these vessels and thus opposing a barrier to the onward flow of the blood; (2) the increased force of the heart beat as the outcome of the direct stimulating action of the venom on its muscular tissue; and (3) the stimulation of the vaso-motor centre, as a result of the steadily increasing venosity of the blood. The slight preliminary fall of blood pressure which is sometimes seen is due to cardiac inhibition, but this subject will be reserved for discussion when dealing in the next section with the action of large doses of the poison. The late fall in the rate of the heart beat is due to cardiac inhibition; the latter is due to several factors. 1. A gradually progressive asphyxiation is taking place throughout such an experiment; this affects the vagal centre in common with the rest of the nervous system; the result is a stimulation of the inhibitory mechanism and a consequent slowing and weakening of the heart. 2. The direct stimulating action of the venom on the vagal inhibitory centre acts in the same direction as the asphyxiation of the centre. 3. There is distinct evidence that even when the influence of the vagal centres is removed inhibition of the heart continues to progress, though in a lessened degree. The obvious inference is that the vagal nerve ends are stimulated by the circulating venom and probably also as a result of deficient aeration of the blood. 4. It is not improbable that a stage of exhaustion of the heart muscle follows the early stimulative action of

[1] A paper communicated by Professor Sir Thomas R. Fraser, F.R.S., to the Royal Society on Feb. 25th, 1904.

[2] Owing to the kindness of Professor Sir Thomas Fraser and of Professor E. A. Schäfer the writer was enabled to carry out this research in the Pharmacological and Physiological Laboratories of the University of Edinburgh. Towards the expense of this research grants were received from the British Medical Association and from the Moray Fund for the Endowment of Research (Edinburgh).

the venom. 5. Exhaustion of the heart is probably predisposed to by the strain put upon the organ in having to work for a long period against an abnormally high blood pressure.

We are now in a position to explain the sudden rapid fall of the curves of heart-beat rate and of blood pressure which ushers in death at the close of one of these long experiments. An over-strained and weakened heart is suddenly and violently called upon to bear a further burden, for respiration has ceased and the medullary centres are acutely asphyxiated. As a consequence there is a violent excitation of the cardio-inhibitory and vaso-motor mechanisms. The heart is slowed and at the same time has to work against a suddenly increased pressure and it gives way. In fact, we have the phenomena of asphyxiation in their entirety. The vessels of the splanchnic area are affected *pari passu* with those of the body generally and they in no wise act independently. The vaso-motor mechanism remains active throughout and is, as we have seen, profoundly affected by changes in the venosity of the blood.

6. Cobra venom, when injected in large doses and especially when given intravenously, causes: (1) a sudden fall of blood pressure; (2) a subsequent rise, provided that the dose has not been too large; and (3) a final fall to zero. The early fall is undoubtedly due to inhibition of the heart. It has been clearly shown that this is mainly brought about by the direct action of the poison on the vagal centres in the medulla oblongata, as it occurs before the accompanying failure of respiration has had time to act. Moreover, it is seen whilst artificial respiration is being actively carried on and can be checked in these circumstances by division of the vagi. On the other hand, there can be no doubt that asphyxiation of the vago-inhibitory centre intensifies and maintains the inhibition which direct influence of the venom on the vagal centre produces. The spontaneous recovery of respiration or the application of artificial respiration has a powerful influence in mitigating the action of the venom on the vagal centre. In the same way artificial respiration, and to a less extent the spontaneous recovery of respiration, appear to act beneficially on the poisoned respiratory centre. Even if the heart is cut adrift from all central vagal impulses, whether direct or indirect, by the division of the vagi there yet remains evidence of a continued inhibition which must be attributed to the direct action of cobra venom on the terminals of the vago-inhibitory mechanism. This action would appear to be a direct one but there is every probability that it is indirect as well, in other words, that it acts through asphyxiation of the vagal terminals as well as by the poisoning of these parts by the circulating poison. There is, however, another factor which must not be lost sight of—viz., a direct exhaustion of the heart muscle as the result of irregular over-stimulation.

7. When the secondary rise of blood pressure which follows the primary fall takes place it is due to the same factors which determine its occurrence when small doses have been injected. It remains to explain why it is sometimes absent, brief, or ill marked. The explanation is simple: it is merely a question of cardiac failure. We have seen that the direct inhibitory action of the venom through the vagal centre is capable of overcoming the tendency which the blood circulating through the heart muscle has to throw that muscle into death in systolic tone. Were it not for these two rival forces to some extent equilibrating each other cobra poison would kill by its direct action on the heart muscle. When the doses are comparatively small, or when the vagi are cut or thrown out of gear by atropin, we find the tonic cardio-muscular influence of the venom in evidence, but when the dose of venom is large, and especially when it is given intravenously (the vagi remaining intact), the inhibitory action overpowers the muscular excitation and failure of the heart occurs. If the inhibition is sufficiently well marked no amount of arteriolar spasm that occurs will compensate it, consequently the blood pressure falls. When the dose of venom is a very large one the direct muscular stimulation may be so intense as to overcome the maximum inhibitory impulse and then the heart dies in systole with a quickened beat and is found after death as hard as a contracted post-partum uterus. In such circumstances any increase in the force of the heart is temporary, for the beat is probably a very partial one, the heart passes through a stage of excitement into one of increasing systolic tonus in which the contractions are very limited in extent.

THE TREATMENT OF INCONTINENCE OF FÆCES BY THE SUBMUCOUS INJECTION OF PARAFFIN.[1]

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INCONTINENCE of fæces may arise from many and very varied causes but from the point of view of surgical treatment the cases may be broadly classed into two groups. 1. Those cases in which the sphincter ani still retains some amount of power but not sufficient to close entirely the anal orifice. It is conceivable that if by introducing paraffin into the submucous tissue on the inner surface of the sphincter we narrow the lumen of the bowel at this situation and thereby diminish the work which the sphincter has to perform, even a weakened sphincter may be able firmly to occlude the remaining lumen and so to render the patient continent. 2. Those cases in which the sphincter is completely paralysed, as in many nervous diseases, or has been entirely removed as after the operation of excision of the rectum. Various plastic procedures have from time to time been advocated with the object of surrounding the anus in such cases with muscular fibres diverted from their natural function, the chief muscles concerned being the gluteus maximus and the levator ani. Attempts have also been made to produce a valvular action of the rectal wall, such as by dissecting out the rectum, twisting it on its long axis, and refixing it, or by producing a sharp curvature or kink in its lower portion—attempts which are frequently unsuccessful. In two cases of incontinence of fæces belonging to this second group, one of which was associated with rectal prolapse, I have obtained great benefit from the submucous injection of paraffin into the lower portion of the rectum, as originally suggested by Gersuny of Vienna in 1899.

CASE 1.—The patient, a male, aged 58 years, was admitted to the Manchester Union Hospital with the history that three years previously he had undergone two operations elsewhere for fistula in ano, as the result of which the fistula was cured but he was completely incontinent of fæces. Two subsequent plastic operations were performed to relieve this condition, but were unsuccessful, and he had had absolutely no control over his stools for three years. On examination no trace of a sphincter could be discovered, the anus extended in a posterior direction almost to the coccyx and was surrounded by several dense scars, the result of former ulceration. Under anæsthesia I injected paraffin in several places into the submucous tissue of the rectum, commencing as high up as I could reach and working towards the anus. In all, upon two occasions, the rather large amount of 52 cubic centimetres of paraffin was introduced, its melting point being 111° F. This patient was shown at a clinical meeting of the Manchester Medical Society three weeks after the operation and I last heard of him nine weeks afterwards, during which interval he had had complete control over his motions and had never soiled his linen upon a single occasion.

CASE 2.—The patient, a boy, aged seven years, had been an inmate either of the Manchester Union Hospital or of the Swinton Schools attached thereto for the last five years, suffering from complete incontinence of fæces associated with a large rectal prolapse dating from infancy. During the past four years he had undergone linear cauterisation on two or three occasions, excision of the elliptical folds of the mucous membrane, and, finally, excision of the lower portion of the prolapsed rectum, all of which were unsuccessful in curing the prolapse, and had no effect upon the incontinence. The anus was abnormally large and lax and easily admitted four fingers, while there appeared to be an entire absence of sphincteric action. At first I injected only six cubic centimetres of paraffin submucously, but even this small amount certainly prevented the prolapse from descending with anything like its former frequency. On a subsequent occasion I introduced 27 cubic centimetres in three successive tiers, each tier consisting of three

[1] A portion of a paper communicated to the Manchester Medical Society on Feb 3rd, 1904.

nodules of three cubic centimetres each and the prolapse has never since recurred, while the incontinence was very considerably improved. As, however, he still occasionally soiled his linen at night I decided to narrow the enlarged anus, which I did by a plastic procedure similar to Tait's flap-splitting operation for the repair of an incomplete laceration of the female perineum and this operation, performed 12 weeks ago, has resulted in complete relief. The boy is still under observation and his general condition has considerably improved since he acquired full control over his motions. An interesting point in this case was that when the patient was under the anæsthetic on the last occasion, before commencing the plastic operation I attempted to draw the former prolapse forcibly down but could not do so.

Manchester.

THE THERAPEUTICS OF THE ICHTHYOL COMPOUNDS: WITH SPECIAL REFERENCE TO ICHTHOFORM AND ICHTHARGAN.[1]

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EXACTLY a year ago I had the honour and privilege of bringing before your notice my experiences with ichthyol in the treatment of pulmonary diseases.[2] When I was asked to give you something on the same lines this session I thought I could not do better than follow up my former paper by saying a few words about the various compounds of ichthyol. As some of you may know, I have devoted much time and careful research to the investigation of ichthyol and its preparations, so convinced am I that in it we possess a most valuable therapeutic agent the properties of which depend not so much on its containing a fairly large amount of sulphur in its composition as on its being a very powerful anti-inflammatory agent. This fact I have tried to bring to the notice of the profession in a short paper on the subject which I recently contributed to the *Journal of Tuberculosis*.[3] I may, perhaps, be allowed to quote the concluding sentences of that paper: "I am no believer in the theory that ichthyol owes its action to its antiseptic property nor in the view that its beneficial effects are entirely due to its action upon nutrition. We must go further afield and regard ichthyol in its true light as a vaso-constrictor and as an anti-inflammatory agent. This is its true action and the only one which is of much value in the application of the remedy to cases of pulmonary tuberculosis. Thus regarded ichthyol becomes a remedy of the greatest importance and one worthy the support of the profession everywhere." Ichthyol, I need hardly remind you, is a natural product that has been chemically treated. It is, in fact, a hydrocarbon oil obtained from a fossiliferous mineral, and this, after being acted on by sulphuric acid, gives us ichthyol-sulphonic acid. It is the ammonia salt of this acid which is known commercially as ichthyol. The history of the discovery of this hydrocarbon oil is of the greatest possible interest but it is somewhat outside the scope of the present paper.

Ichthyol, moreover, may be combined with quite a variety of active therapeutic substances. Thus we have iron-ichthyol, otherwise known as ferrichthol, calcium-ichthyol, sodium-ichthyol, and combinations with lithium, zinc, and mercury. Lastly, we have two quite recent ichthyol compounds—namely, ichthoform and ichthargan—the former being a compound of ichthyol with formic aldehyde and the latter the silver salt of ichthyol. Although I have had considerable experience with all of these time will not permit of my making more than a passing reference to most of them, reserving the greater part of my paper to a more detailed consideration of the two last named—ichthoform and ichthargan.

Iron-ichthyol or ferrichthol is a brownish-black, amorphous powder, very light and non-hygroscopic. It is practically odourless and tasteless and is best administered in cachet or in tablet form. The amount of iron contained in this preparation is about 3·5 per cent. Aufrecht of Berlin was one of the first to publish results of clinical tests with this compound. Personal clinical experience with ferrichthol shows that it is an excellent remedy in secondary anæmia. Thus in a case of subacute rheumatism in which the red corpuscles and the hæmoglobin were reduced they returned to normal within a month under the administration of 30 grains of ferrichthol per day. Another case in which this remedy proved valuable was that of a woman suffering from carcinoma ventriculi. She was able to take ten grains of ferrichthol in the 24 hours without producing nausea, although many other iron preparations previously given had not been retained. In a case of chronic renal disease where the patient suffered from intense headache and was markedly anæmic ferrichthol proved very useful not only in improving the condition of the blood but also in diminishing the frequency and severity of the cephalic pain. In severe cases of dysmenorrhœa associated with constipation and anæmia one of the most suitable remedies is ferrichthol in ten-grain doses thrice daily. In cases of chlorosis, on the other hand, I have seen no good results follow its persistent employment. It is, therefore, in secondary anæmia that it is of most value, and here no doubt the action of the iron is largely aided by the presence of the ichthyol with which it is combined. Although I have no personal experience of its use in skin affections it is interesting to note that Unna[4] advises its adoption in all chronic conditions, especially in urticaria and analogous skin diseases, in papular and bullous affections, and in lichen as it occurs in children. Again he finds it of service in diseases complicated either by chlorosis or by anæmia. Thus in eczemas occurring in anæmic subjects the ichthyol in combination with iron improves the circulation and so does good. No doubt iron-ichthyol has a wide sphere of therapeutic application in all diseased conditions associated with anæmia, and my own observations on its value in general diseases are fully borne out by Unna's with regard to dermatological conditions.

Sodium-ichthyol is a solid preparation and thus forms an excellent substitute for the internal administration of the ammonia salt as it can readily be made into pills. I am of opinion, however, that it is not nearly so active in pulmonary disease as is the original ammonia salt, though it is perhaps a little more readily taken by fastidious patients. In chronic gastric catarrh it has the power of checking the fermentative processes which form such a troublesome element in many of these cases. Generally speaking, where ichthyol is indicated this preparation should be prescribed, except in cases of pulmonary disease in which the original ammonia salt alone should be employed.

Calcium-ichthyol is well suited for use in dermatological practice and I have found it readily taken by children. It is not, however, in my experience such a generally useful salt as are some of the others. The zinc salt finds many indications for its use in diseases of the skin and hence its value appeals most to dermatologists. It may be used as an ingredient in ointments and in certain cases is to be preferred to the ammonia salt. Of the lithium salt I cannot now speak as, not being an advocate for the use of lithium, I have not felt it my duty to experiment much with this compound of ichthyol.

Within the last few years ichthyol has been made use of as a vehicle for certain insoluble agents such as cresol, eucalyptol, and even iodine. I have elsewhere[5] fully recorded my experience of the use of iodine-anytol, as this new combination is called, and I need not stay to consider these quite recent additions to our pharmaceutical armamentarium. Of all preparations of ichthyol two stand out pre-eminently—namely, ichthoform and ichthargan. Of these I have been making trial for some time past and it is with the greatest possible pleasure that I take this opportunity of bringing the results of my work in this connexion before your notice.

Ichthoform is an amorphous, brownish-black powder, being practically odourless and tasteless. It is insoluble in ordinary media such as water, alcohol, and glycerine. When brought into contact with dilute alkalies it gradually

[1] A paper read before the Therapeutical Society on Feb. 23rd, 1904.
[2] A paper read before the Therapeutical Society on Feb. 17th, 1903, and published in THE LANCET of August 8th, 1903, p. 384.
[3] October, 1903.
[4] Monatshefte für Praktische Dermatologie, 1901, Band xxxii., Heft 5.
[5] The Medical Times, Dec. 20th, 1902.

splits up into its two components—ichthyol and formic aldehyde. The latter being a powerful germicide and the former an active anti-inflammatory agent, ichthoform is at once an antiseptic and an astringent. It is practically a non-toxic substance and can therefore be administered internally with comparative safety. Rabow and Galli-Valerio of Lausanne [6] made a thorough investigation into the properties of ichthoform for the purpose of clearing up the following questions:—1. What is its influence on the development of bacteria and fungi? 2. What is its value as a deodorant? 3. How is it borne by animals? 4. What effect has it on man? They found that gelatin plates infected with such organisms as bacterium coli, bacillus typhosus, bacillus icteroides, bacillus pyocyaneus, staphylococcus pyogenes aureus, and aspergillus niger when dusted over with ichthoform showed sterility during the first week, while vigorous development took place in control plates. In some cases development occurred during the second week, but the colonies were few in number with the exception of aspergillus niger. To show the deodorant action of ichthoform they took nine grammes of rabbit's fæces, diluted these with water, and then added half a gramme of ichthoform. This was then heated to a temperature of 37° C., but no disagreeable odour was felt even after the lapse of several days. They then took frogs weighing 32 grammes and introduced into the abdomen one-tenth of a gramme of ichthoform without producing any untoward result. They further experimented with guinea-pigs weighing 250 grammes and into these they injected half a gramme of ichthoform without producing any functional disturbance. As regards its effect on man it was found that from two to three grammes could be taken daily without harmful effects. It gave excellent results in intestinal diseases and also in the treatment of wounds, in the latter case forming a valuable substitute for other less agreeable substances such as iodoform.

Personally I have used ichthoform more or less extensively in four different directions: (1) as an intestinal astringent and antiseptic; (2) as a dusting powder; (3) as an ingredient in ointments; and (4) as a means of impregnating gauze.

1. *As an intestinal astringent and antiseptic* I have employed ichthoform in a large number of cases. In infantile diarrhœa, so prevalent in the summer months and no doubt due to the presence of micro-organisms, ichthoform has afforded me excellent results. My practice is to administer it to infants one year of age in doses of two grains every six hours in a little jelly. For children generally the dose ranges from two to ten grains given thrice daily. To them it may be given concealed in milk, cocoa, or gruel; but I much prefer to give it sandwiched between two thin pieces of buttered bread. In tuberculous lesions of the intestinal tract ichthoform has given me great satisfaction. Where diarrhœa is a prominent symptom I have ordered ichthoform in doses of from 10 to 15 grains thrice daily with marked effect. In a few instances the dose has been increased to 20, 25 and even to 30 grains, but these doses are somewhat excessive and may give rise to dryness of the throat and other troublesome phenomena. These I have not observed personally in my own cases, but Schäfer of Munich mentions [7] especially dryness of the throat as resulting in one or two of his cases. I am of opinion that these undesirable symptoms were entirely due to the remedy being given in somewhat too large doses. As he states, however, ichthoform is non-poisonous and may be given in amounts even up to ten grammes a day without any harmful effects, and so too much importance need not be attached to the occurrence of these untoward results. In mild cases I have noticed great improvement even on the third day after its administration, and within a week, as a rule, the diarrhœa was found to have ceased. In more obstinate and severe cases not infrequently the dose of ichthoform has had to be raised to 30 grains before any evident effect was produced. In one or two cases I have tried rectal injections of mucilage of starch containing from 40 to 50 grains of ichthoform. As these were cases in which the patients were practically moribund no inference of any practical importance can be drawn as to the ultimate result of this form of treatment, but certainly in all cases the diarrhœa and abdominal discomfort were considerably alleviated. I would urge, however, that this means of employing ichthoform should be given a more extended trial.

[6] Therapeutische Monatshefte, April, 1900.
[7] Therapie der Gegenwart, October, 1900.

Polacco of Milan has given us a short account [8] of his experiences with ichthoform in the treatment of enteric fever. He employed doses of half a gramme frequently repeated, so that in some cases the patients received as much as six grammes per day. This form of treatment was at times combined with ichthyol baths. 60 grammes of ichthyol were dissolved in a bath of hot water at a temperature of 95° F., and while the patient was in the bath this was reduced to 86° and even to 81·5°. The patient remained in the bath from 10 to 15 minutes and all the time an ice-bag was kept to the head. This combined method of treating enteric fever resulted in a reduction of the patient's temperature and a diminution in the frequency of the pulse, while the respirations became fuller and deeper. Polacco's statistics for the year 1900-01 give a mortality of 5·4 per cent. under this treatment, whereas previously it had been as high as 22·22 per cent.

2. I shall now pass on to consider my second use of ichthoform—viz., *as a dusting powder*. It is more particularly in cases of varicose ulcer that I have found benefit from this use of ichthoform. In many of these cases I have used it pure. Even foul discharging ulcers have healed under the simple daily free application of this powder. The fœtor rapidly disappears and the astringent action of the remedy soon makes itself felt. It thus stimulates healing by formation of healthy tissue. For foul ulcers I know no more trustworthy remedy. Admixed with equal parts of boric acid ichthoform will be found serviceable as a dusting powder for general use. Wherever there is a tendency to the formation of redundant granulation tissue during the process of wound-healing the area should be freely covered with ichthoform and zinc oxide in equal parts. For dysidrosis I find nothing so satisfactory as a powder composed of ichthoform, bismuth, and starch.

3. *As an ingredient in ointments* ichthoform is of special value. Time after time cases of chronic eczema have yielded to ointments into the composition of which ichthoform has entered. It may be used in strengths of from 1 to 5 per cent. with lanoline or vaseline as base. If used in too great strength it is apt to harden the skin and so delay the process of repair. Although, naturally, I have not had very great facilities for treating skin diseases with ichthoform still in the few that have come under my care I have made use of ichthoform with definite results. It is of service not only in subacute and chronic eczema, but also in the impetiginous eczema so frequently met with in school children, in certain affections of the nails, and also in scabies.

4. Lastly, I have suggested its use in the form of *ichthoform gauze*, to be used as a substitute for iodoform gauze for packing cavities. Thus for cavities left after removing tuberculous cervical glands or in cases of ischio-rectal abscess and fistula in ano nothing will be found so suitable and so efficacious as gauze thoroughly impregnated with ichthoform. I trust that a gauze of this nature will soon be made available for general use as a better and less expensive material than the present iodoform gauze.

If I were to sum up the conclusions which I have arrived at after considerable experience in the use of ichthoform in private and other practice I should say that: 1. It is one of the most efficacious antiseptics which we at present possess, more especially in cases of intestinal disease where its action is more certain and less harmful than salol and similar substances. 2. It forms an excellent substitute for iodoform in all cases where the latter is indicated. It is odourless and practically non-toxic, epithets which cannot be applied to iodoform. 3. For internal administration it is best given in small doses frequently repeated. Large single doses do not give the same satisfactory results and are more likely to produce untoward symptoms. As much as two drachms may be given in one day if divided into small, frequently repeated doses.

Although my experience with ichthargan is perhaps hardly so extensive as with ichthoform, still I hope to be able to place before you certain facts of practical interest and importance which I have noted during my employment of ichthargan. Ichthargan is a brownish-black, amorphous powder, containing 28·7 per cent. of silver, and is quite odourless and tasteless. It is readily soluble in warm or cold water, in dilute alcohol, and in glycerine. It is, however, insoluble in absolute alcohol, in ether, and in chloroform. Its solutions are clear when freshly prepared but become dark on exposure to light. It is relatively non-toxic.

[8] Deutsche Medicinische Wochenschrift, 1901, No. 5.

Solutions should always be prepared fresh with sterilised water and filtered.

As regards the bacteriological properties of ichthargan Aufrecht has shown[9] that it is more powerful than silver nitrate in its action on the streptococcus, staphylococcus pyogenes aureus, on the bacilli of enteric fever and of diphtheria, and on gonococci. He compared its effects with those produced by collargol and protargol. He not only observed the superiority of ichthargan over these other silver compounds but he also noted that ichthargan possessed greater penetrating powers. Pieces of liver were placed in a 5 per cent. solution of ichthargan for 16 hours and it was found that the entire mass had been acted on, whereas pieces similarly treated with silver nitrate only showed a deposit of silver on their surface at the expiry of the test. It was further found that ichthargan was less poisonous than other silver salts. The lethal dose for guinea-pigs and rabbits was determined by experiment to be between 0·1 and 0·15 gramme per kilogramme of body weight, whereas that of silver nitrate was 0·015 gramme per kilogramme, and that of protargol somewhere between 0·02 and 0·04 per kilogramme. Aufrecht's further experiments regarding the effects of intravenous injections in animals I pass over as I fear we may fall into error if we apply too dogmatically to the human organism the results obtained in the case of the lower creation. The great fact which we must constantly bear in mind regarding ichthargan is that more than two thirds of it is made up of ichthyol and hence it combines the therapeutic action of a silver salt with the valuable analgesic, antiseptic, and anti-inflammatory effects of the former. Moreover, it contains a very large proportion of silver and is exceedingly stable in solution and, above all, is comparatively non-irritating.

On the whole I think it will be more profitable for us to consider together the various clinical uses to which ichthargan may be put rather than to pursue further its pharmacological and bacteriological properties. The therapeutic uses of ichthargan may be classified under seven different categories and we shall now look at each of these very briefly.

1. *The employment of ichthargan in gonorrhœal urethritis.*—Much attention has been paid by continental clinicians to the use of ichthargan in this somewhat troublesome affection, notably by Lohnstein,[10] Fürst,[11] Leistikow,[12] Duhot,[13] Goldberg,[14] Rudolf,[15] and others. My experience of its value in gonorrhœa has been chiefly amongst dispensary patients. These in some respects are a difficult class to deal with, as they not only lack the ordinary habits of personal cleanliness but they are apt to treat the condition somewhat lightly and to regard themselves as cured as soon as they are free from pain and genito-urinary discomfort. Again, many of them fail to return at regular intervals, while some make only one visit and nothing more is heard of them. Putting aside the cases where the visits were either too few or irregular to be of any clinical value I find there still remain 21 in which ichthargan was employed with more or less success. The mode of treatment adopted was to prescribe an alkaline diuretic mixture combined with a little tincture of hyoscyamus and to order morning and evening urethral injections of ichthargan in distilled water. The strength of solution employed varied from 1 in 5000 to 1 in 500, according as the case was acute or chronic in its nature. I found it always advisable to begin with comparatively weak solutions and gradually to increase the strength of the injection as I found the patient's urethral mucous membrane would tolerate it. In the majority of acute cases cure was effected within three weeks, the injection being employed, as a rule, thrice daily. In two subacute cases an injection of 1 in 1000 produced considerable irritation. Patients were always advised to continue the injection at bedtime for some days after they were considered cured. In chronic cases, perhaps more so than in any others, were ichthargan injections found very valuable. The strength used never exceeded 1 in 500 as this was found to be sufficiently energetic. Leistikow, however, mentions much stronger solutions, but these I have found from experience are apt to cause the patient considerable suffering. They may, indeed, have somewhat of a caustic action and so produce cicatricial contraction of the urethral canal, a most undesirable result. In the treatment of chronic urethritis I believe bougies containing a small amount of ichthargan (say, a quarter of a grain) would be more advantageous even than injections, as they are not only more readily applied to the diseased parts but they are also more penetrating in their effects. Still, even with simple injections I have had excellent results, only four out of my total of 21 cases having failed to be cured completely, although even these exceptional cases derived much benefit from ichthargan. Indeed, I fear their failure to respond to its action with the best results was entirely due to irregularity in habits, alcoholic and otherwise. It is only fair, however, to warn against the use of too strong injections, as although ichthargan is a comparatively innocuous remedy, still it has undoubtedly a caustic effect if used in greater strengths of solution than those already mentioned.

2. *Ichthargan in gynæcological affections.*—All of you know how valuable ichthyol is in gynæcological practice and its combination with silver in the form of ichthargan is equally beneficial. The cases in which I employed it were mostly those of leucorrhœa associated with a variety of conditions, such as pelvic cellulitis, endometritis, uterine retroflexion, and cervical catarrh. My method of application was by means of pessaries containing half or one grain of active ingredient made into a mass with oil of theobroma. One of these was placed in the posterior vaginal fornix every alternate night and this was followed by boric acid douches next day aided by saline aperients. Improvement was always manifested even after the first or second pessary had been inserted and treatment rarely required to be continued for more than a few weeks. The milder cases were cured within a week; the more severe cases necessitated assiduous application of the remedy for a month or six weeks. Instead of the pessaries a 10 per cent. solution of ichthargan in glycerine may be employed. Tampons of cotton-wool are soaked in this and placed in the vagina. I prefer, however, to use pessaries, as they are cleanlier and more effective in their results. The indication for the use of ichthargan in gynæcological practice is the necessity for an astringent plus an anti-inflammatory agent.

3. *Ichthargan in dermatological practice.*—In the treatment of skin diseases ichthargan will be found of service when employed in the form of ointments of varying strengths. Here again my dispensary experience has proved of great use. Cases of skin affection which otherwise I should not have had an opportunity of treating have time and again presented themselves and I need hardly say that I have lost no opportunity in experimenting with ichthargan wherever its employment seemed indicated. The ointments used varied in strength from 0·5 to 5 per cent. in equal parts of lanoline and vaseline. The stronger ointments are apt to cause much burning where the skin is at all tender or raw and for all ordinary cases a 1 or 2 per cent. ointment is quite powerful enough. My cases numbered 39 in all, a small number of cases certainly but sufficiently varied in character to afford practical evidence as to the real value of ichthargan. They include two cases of tinea tonsurans, seven of seborrhœic eczema, three of herpes zoster, and six of various types of eczema, the remainder including ulcers, boils, and a variety of minor skin affections. Boils after being thoroughly treated by means of inunctions of a 10 per cent. ichthargan ointment are very frequently aborted. Ringworm affecting the scalp also requires the application of a 5 or even a 10 per cent. ointment. Otherwise I think a 1 per cent. ointment is the most generally useful.

Unna[16] has recorded his experience of this remedy in cases of ulceration. He used it as a dusting powder in strengths of 1 and 5 per cent. diluted with talc. He combined this with zinc gelatin bandages and compresses and obtained good results. He states that ichthargan is a keratoplastic remedy, inducing the formation of new epithelium. His best results were obtained in old callous ulcers where the horny epithelium was first removed by the application of salicylic-creasote or salicylic-cannabis plaster mulls. He also observes that the antiseptic and keratoplastic properties of ichthargan suggest its use in cases of eczema, especially as it is met with on children's heads.

4. *Ichthargan in affections of the throat and nose.*—So far as I am aware the only literature on the use of ichthargan in

[9] Deutsche Medicinische Wochenschrift, 1900, No. 31.
[10] Allgemeine Medicinische Central-Zeitung, 1900, No. 80.
[11] Deutsche Medicinische Wochenschrift, 1901, No. 14.
[12] Monatshefte für Praktische Dermatologie, 1901, No. 23.
[13] Annales de la Policlinique Centrale de Bruxelles, November, 1901.
[14] Therapeutische Monatshefte, March, 1902.
[15] Wiener Medicinische Presse, 1902, No. 28.
[16] Monatshefte für Praktische Dermatologie, 1901, No. 2.

these diseases is a paper which appeared in the *Laryngoscope*[17] from the pen of Dr. B. Douglas of New York. I shall not attempt to do more here than to summarise his results, as my experience of ichthargan in this connexion is a very limited one. For nose and throat work a strength of 4 per cent. will be found most generally useful. In 10 per cent. solutions this remedy produces a disagreeable taste and nasal irritation which lasts from 15 minutes to two hours and causes some congestion of the mucous membrane, with profuse nasal discharge, lacrymation, and a certain amount of sneezing. After much careful experimenting with this new remedy Dr. Douglas found that the strength of solution generally most satisfactory was a 4 per cent. one. This usually caused slight burning and smarting but no congestion. If congestion was present at the time of application the surface soon became pale and contracted. Its action was prompt and lasted for from 15 to 20 minutes. In atrophic rhinitis it acts as a deodorant. It has also anti-inflammatory and stimulant effects and is a powerful modifier of nasal secretion. It is therefore *par excellence* the remedy for atrophic rhinitis. In hypertrophic cases the best results are got from a 4 or 5 per cent. solution. One of my own cases, that of a girl suffering from atrophic rhinitis, showed marked improvement after the use of a 1 per cent. ichthargan ointment. For syphilitic, tuberculous, and simple chronic laryngitis I have found pigments of a 5 per cent. ichthargan solution extremely useful.

5. *Ichthargan in diseases of the eye.*—Save of the value of a 0·5 per cent. ointment in cases of marginal blepharitis I cannot speak from personal experience of ichthargan as a remedy of importance in this connexion. Fortunately, however, for my present purpose I am able to quote from the experience of others better qualified to speak on this matter than myself. Thus Guttmann of Breslau has reported[18] its use in 61 cases of eye affections. These include 25 cases of acute catarrhal conjunctivitis, 13 of chronic conjunctivitis, seven resulting from affections of the lacrymal apparatus, ten of trachoma, six of ophthalmia neonatorum, and one of serpiginous ulcer of the cornea. His conclusions may be summarised as follows. In congestive catarrh it proves efficient although it cannot be said to replace the older remedies for such conditions. He recommends that further experiments should be made regarding its use in ophthalmia neonatorum. In affections of the lacrymal apparatus it is a very useful remover of purulent secretion. Its chief action, however, is developed in the dissecting forms of trachoma and it is one of the most useful remedies we at present possess for the medicinal treatment of pannus.

Marczel Falta,[19] writing of his use of ichthargan in cases of trachoma, says that he has used it in all forms and at all stages of this disease. He found that fresh cases were completely cured by ichthargan in from six to eight weeks. In chronic cases the pannus is reduced very speedily. He began with a 0·5 per cent. solution and gradually increased the strength to 3 per cent. These solutions are brushed over the affected part and by this means a pannus showed retrogressive metamorphosis ("Rückbildung") in from three to four days, and a case of recent trachoma could be cured in from six to eight weeks. Similar results were obtained by Gortaloff[20] in cases of trachoma, who therefore considers ichthargan an excellent remedy for the treatment of trachoma and its complications.

6. *Its internal employment.*—During the course of his investigations Aufrecht took five grains of ichthargan on three successive days and eight grains on the fourth. No loss of appetite was produced, the urine remained clear and free from albumin, while the stools were unaltered in appearance. This preparation may, therefore, safely be given internally. It may be given in solution in the proportion of from half a grain to two grains dissolved in eight ounces of water and of this a teaspoonful may be taken three or four times a day. It would seem useful in promoting the healing of gastric ulcers. It might also be given as an enema in cases of dysenteric and other intestinal lesions. Not having as yet tried ichthargan in the manner suggested I offer these remarks for what they are worth. Doubtless, further experience will convince us of their accuracy.

7. *Ichthargan in veterinary practice.*—This is, to me, a subject of much interest and I have gone through a vast collection of German literature in the hope of being able to place before you a review of the work that has been done abroad in this wide field. Time, however, forbids more than a passing reference. I wish particularly to mention the names of Eugen Bass, Eberhardt, and Leibert in this connexion. Eberhardt employed intravenous injections of ichthargan solution in cases of influenza in horses. The strength used for injection was 1 per cent. in distilled water. His results were such that frequently the temperature fell to normal within two days. This has suggested a similar use of ichthargan in cases of septicæmia as it occurs in man. I wish there was time to go more fully into this matter, as it is one of great interest, but I must not detain you longer.

From what I have said it will be evident that the various preparations of ichthyol have a wide sphere of therapeutic application. This remark applies especially perhaps to ichthoform and ichthargan which, after the parent remedy itself, are, in my opinion, two of the most valuable anti-inflammatory agents at present in our possession. They are certainly trustworthy in their action and therefore valuable additions to our therapeutic stock. They assuredly deserve to be used more extensively by the profession in this country and if these somewhat brief remarks lead to an awakened interest in the ichthyol compounds I shall feel more than rewarded for the trouble I have taken in bringing them before you.

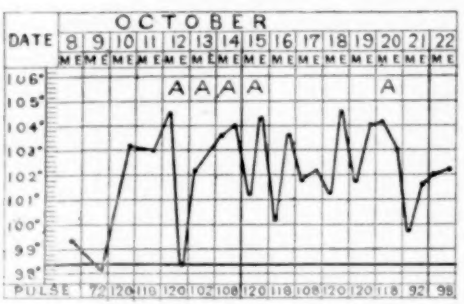
Edinburgh.

[17] May, 1902.
[18] Wochenschrift für Therapie und Hygiene des Auges, vol. v., No. 36.
[19] Archiv für Augenheilkunde, 1901.
[20] Allgemeine Medicinische Central-Zeitung, 1902, No. 5.

A CASE OF METRITIS AND CELLULITIS IN THE PUERPERIUM TREATED WITH ANTISTREPTOCOCCIC SERUM.

BY JOHN W. DUNCAN, M.B., CH.B. ABERD.

THE patient was a primipara, aged 24 years. The labour was normal after the case came under my care, except that the membranes were at the beginning bound to the uterus by slight adhesions that had to be broken before the os commenced to dilate. There was a history of irritation and discharge from the vulva before labour. The woman had been told by her mother and the nurse to bear down strongly and she had done so for a good while before the time when I first saw her, which was about 7 A.M. on Oct. 8th. Delivery took place the same day at 2 P.M. The perineum externally was intact but some abrasions were found in front afterwards. In the evening the fundus uteri was two fingers' breadth below the umbilicus and half a finger's breadth to the right side. The daily temperature and pulse-rate are shown on the accompanying chart. On the 9th the patient seemed to be doing very well;



A, Ten cubic centimetres of antistreptococcic serum injected.

a fairly normal pulse tracing was taken. The fundus was one finger's breadth above the umbilicus and three fingers' breadth to the right. In the afternoon she complained of pain and the nurse gave her castor oil in the evening. On the 10th there was a motion of the bowels. Headache was complained of and there was pain in the lower part of the abdomen with marked tympanites. The fundus was half a finger's breadth above the umbilicus and one finger's breadth to the right. The tongue was brown and furred

on the dorsum, with whitish edges. The condition was diagnosed as metritis, and turpentine stupes were applied and aperient medicine was given. On the 11th the fundus was three fingers' breadth below the umbilicus and one finger's breadth to the right. Syringing with solution of mercuric chloride was used and iodoform pessaries were ordered; by mistake these were not got and a pellet of mercuric chloride was put in the vagina by the nurse, the consequence being that the patient was thrown into an agony of pain and could not pass urine. At a consultation which was held the consultant approved of the treatment which I was adopting. On the 12th the uterus was five fingers' breadth below the umbilicus. At 2 P.M., when the temperature was 104° F. and the pulse 120 per minute, ten cubic centimetres of antistreptococcic serum, obtained from Messrs. Burroughs, Wellcome, and Co., were injected, the vaginal outlet was dusted with iodoform, and an iodoform pessary was left in the vagina after the catheter was passed. At 8.45 P.M. the temperature was 98·4° and the pulse rate 88. The vaginal abrasions were perfectly clean, showing red granulations where a "diphtheritic" covering had been; the vulva was swollen and slightly everted from irritation by the mercuric chloride. On the 13th the temperature was 102·2° as shown in the chart. The pain and tympanites were both less but hardness and tenderness were now made out in the left inguinal region and also just above the pubes. The tongue was moist but was still red at the edges with a dirty grey coating on the dorsum. The vulva was now less red and swollen. A tear was discovered in the left side of the cervix and there were many smaller ones around the edge. Ten cubic centimetres of antistreptococcic serum were injected. On the 14th an injection of ten cubic centimetres of antistreptococcic serum in the back was given in the morning and was followed by a fall in the temperature and the pulse-rate. On the 15th an injection of ten cubic centimetres of antistreptococcic serum was given in the afternoon and was followed by a rise of temperature. There was some redness of the back at the site of the injections. The fundus uteri was five and a half fingers' breadth below the umbilicus. On the 16th, 17th, 18th, and 19th the pyrexia continued. No serum was used. On the 20th ten cubic centimetres of antistreptococcic serum were injected. On the 21st there was a decided improvement in the patient's condition. On the 22nd there were marked swelling and redness on both arms just above the elbow and bullæ appeared on both legs—three on the right leg and one on the left. The improvement in the patient's condition nevertheless continued and her temperature became subnormal on the 30th. On the 31st she was removed in an ambulance vehicle to a more suitable house. On Nov. 6th her temperature rose to 102·2° and the pulse-rate to 112. The calf of the right leg became red and swollen and an abscess formed in the leg. This abscess and the swelling in the right arm were opened but the swelling in the left arm disappeared without being incised. Convalescence was delayed for about ten weeks from the date of confinement. Some very slight œdema was left in the leg and foot and a slight limp was apparent. Five injections of antistreptococcic serum were given and a fall in the patient's temperature followed three of them—namely, those given on Oct. 12th, 14th, and 20th, while on the contrary a rise followed the two injections given on Oct. 13th and 15th. Only a few indeterminate cocci were found in the vaginal discharge. The onset of metritis was marked by a delay in the involution of the uterus, as shown by the measurements recorded above. The house where the patient was confined was a small fruit shop, the backyard of which abutted on the backyard of a rag-and-bone shop where green, mouldy rabbit skins were to be seen in the window. Next door to the fruit shop was a butcher's shop, and the patient's mother, who was present at the confinement, kept a fish and rabbit shop.

Hockley, Birmingham.

MEDICAL MAGISTRATE.—Mr. T. W. Heywood, M.R.C.S. Eng., L.R.C.P. Irel., D.P.H., has been appointed a magistrate for the borough of Darwen.

UNIVERSITY OF OXFORD.—Sir John Burdon Sanderson, who ceased to be a member of the Board of Faculty of Medicine on his resignation of the Regius professorship of medicine, has now been made a co-opted member of the board and has been re-elected chairman for the current year.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

WESTMINSTER HOSPITAL.

FIVE CASES OF ULCERATIVE COLITIS.

(Under the care of Dr. W. MURRELL.)

CASE 1.—A man, aged 21 years, was admitted to Westminster Hospital on May 2nd, 1903, for diarrhœa and vomiting. He stated that for four months his bowels had been relaxed and that for six weeks they had acted very frequently, often 16 or 17 times a day. The motions were fluid and not infrequently mixed with blood. He had had treatment but without benefit. For two days he had suffered from persistent vomiting, with colicky pains in the abdomen, and it was the onset of this symptom which determined his visit to the hospital. His weight had fallen in two months from 9 stones 3 pounds to 6 stones 12 pounds. He was resident in London and had never been abroad; he had had no previous illness and his family history was unimportant. On admission he was found to be thin and wasted and his eyes were sunken and surrounded by dark rims. He looked anæmic but his red blood corpuscles numbered 4,650,000 and the leucocytes 15,400 per cubic millimetre. His mental condition was not impaired and he was always bright and cheerful. His temperature was elevated and for many months ranged from 100° to 103° F. daily. The pulse was 108 and of poor quality. Widal's reaction was not given. The vomiting speedily subsided and was never a troublesome feature, but the diarrhœa persisted, there being usually about 60 motions a week, most of them liquid and offensive. They were passed with very little pain and consisted chiefly of mucus, with from time to time a little blood. The deposit contained strands of mucus in which were many leucocytes but no circular pits denoting the openings of mucous glands. The bacteria of the fæces were almost entirely streptococci but sometimes they were present only in scanty numbers, other organisms being seen of which the majority were large bacilli. The tongue was clean, red, and slightly irritable. The appetite from first to last was good and the patient constantly expressed a desire for more food. Thirst was not a prominent symptom. The urine was of specific gravity 1022, faintly acid, and contained neither sugar nor albumin. The abdomen was not distended and contained no free fluid, there was no enlargement of the liver or spleen, and there was only slight tenderness over the descending colon.

As the patient was in the hospital for eight months it would serve no useful purpose to trace his progress from day to day. The elevation of temperature was constant and the diarrhœa continued persistently and never alternated with periods of constipation. In June an ischio-rectal abscess was detected on the left side and in August there was a similar formation on the opposite side. He was kept strictly in bed and for many months occupied a bright and airy room at the top of the hospital. The windows on account of the fœtid odour were kept constantly open, so that the patient had practically open-air treatment. His diet consisted chiefly of milk with a little beef-tea and plasmon arrowroot. Light puddings, chicken panada, and other easily digestible foods were tried from time to time but invariably increased the frequency of the motions. The medicinal treatment consisted in opium and morphine in all forms, including enemata, carbonate of bismuth in doses varying from a drachm to half an ounce every four hours, acetate of lead, perchloride of iron, and other astringents, antiseptics such as β naphthol, salol, perchloride of mercury, and various preparations of formic aldehyde, powdered ipecacuanha given dry and with the usual precautions, and many other drugs, none of which seemed to exert the slightest beneficial effect. The patient's general condition was so unsatisfactory that it was considered inadvisable to resort to rectal injections of nitrate

of silver. The question of operation was frequently discussed and was negatived. Early in January, 1904, the range of temperature was lower and was often subnormal, the diarrhœa was more persistent, and the patient passed 191 motions in one week with 53 in the four following days. As he was rapidly losing ground it was decided to give him the chance of an operation.

On Jan. 15th, under A.C.E. mixture, Mr. W. G. Spencer made an incision in the right iliac fossa and exposed the appendix which was found to be bound down by adhesions, so that it was impossible to catheterise it as had been intended. A small incision was consequently made in the cæcum close to the origin of the appendix and a rubber catheter was inserted. An attempt was made to sew in the tube but this was impracticable owing to the rottenness of the gut wall. A knuckle of intestine was therefore withdrawn from the abdomen and fastened by a colotomy rod passed through the mesentery. Four pints of normal saline solution at 100° were poured down the catheter and ran out by the rectum. There was found to be a small perineal fistula. The exposed knuckle of gut was powdered with iodoform and covered with several layers of gauze. At 7 P.M. on the day of the operation the temperature fell to 96°, but after a hypodermic injection of morphine rose at 11 P.M. to 99°. On the following day the wound was dressed and the patient vomited five times. The temperature remained low, falling to 98° in the evening. On the 17th the vomiting continued and the temperature ranged from 97·4° to 95°, the pulse being 100 and the respirations 20. On the 18th the temperature was but little over 95° at any time during the day and the patient died early on the morning of the 19th after an illness of about 12 months' duration.

Necropsy.—At the post-mortem examination (which was performed by Dr. R. G. Hebb) all the tissues were found to be extremely pallid and exsanguine. In the peritoneal sac was much slimy pus and the serous membrane was pallid, smooth, and slimy. The whole of the large intestine from the valve to the anus was in a condition of chronic ulcerative colitis, the mucosa was thickened and œdematous, villoid in places, of blackish hue in parts, and in parts purplish. The mucosa was cut up into islets of varying size by deep fissures which reached in places to the muscular coat. The colon was contracted throughout. In the last nine inches of ileum were a few deep-set small ulcers. The mesenteric glands were much enlarged and some were cretaceous. The appendix was buried in a mass of fibrous tissue, the fibrosis extending to the rectum and adjacent parts. All the other organs of the body were normal.

CASE 2.—A man, aged 25 years, was admitted into Westminster Hospital on July 10th, 1903, with a history of diarrhœa of three months' duration. He had been for a short time in Charing Cross Hospital where he had been treated with a mixture of salicylate of bismuth, tincture of opium, and hydrocyanic acid. He was a Londoner and had never been out of England. He stated that he had had rheumatic fever nine years previously when there was diarrhœa with blood and mucus in the motions. On admission and for some weeks subsequently the temperature was slightly elevated but rarely rose above 100° F. There was persistent diarrhœa, there being usually about 70 motions a week, for the most part watery, offensive, and containing blood and mucus. On microscopical examination they were found to contain torulæ, streptococci in two varieties, bacilli (the bacillus coli communis and others), epithelial cells (columnar and spheroidal), and much pus with the débris of food. No shreds of mucosa were seen. Later the organisms of the fæces were almost exclusively bacilli, cultivation yielding not only the bacillus coli communis but a large bacillus not staining by Gram's method and probably the bacillus proteus vulgaris. No recognisable pathogenic organisms were detected. Vomiting was a prominent symptom, the contents of the stomach being evacuated from three to five times in the 24 hours. The liver was not enlarged and there was no tenderness over the abdomen. The urine was free from albumin and sugar. The treatment was in the main that followed in the previous case, but for a time the patient was given two drachms of sulphate of magnesium dissolved in the minimum of water at 6, 7, 8, and 9 o'clock in the morning and at 3, 4, 5, and 6 o'clock in the evening with five grains of quinine at the first and last dose. It was not clear, however, that it did any good. In August a bed-sore formed over the left trochanter and another over the crest of the ilium. The diarrhœa continued with unabated severity, but the temperature was lower, being at times subnormal. His general condition was most unsatisfactory and on August 31st he was practically pulseless. It was thought to be useless to restrict his dietary and he was given solid food. From that day he gained strength, the temperature returned to the normal, and the diarrhœa ceased. On Oct. 22nd he was sent to a convalescent home, but on Nov. 13th was brought back in an ambulance with a return of the fever and diarrhœa, there being 59 motions in the first week and 97 in the next. Little by little, however, the acute symptoms subsided, the appetite returned, he gained weight, and was discharged apparently well on Jan. 17th, 1904, after an illness of ten months' duration.

CASE 3.—A woman, aged 37 years, was admitted into Westminster Hospital on July 21st, 1903, having been brought from Lambeth in an ambulance. She stated that she had been taken ill ten days previously when she was "burning hot" and had severe pains in her legs. She had been in bed for five days suffering from diarrhœa, for which she had had medicine and slop diet. There was no family history of importance and her only illnesses were pleurisy nine years previously and a more recent attack of influenza. Her temperature soon after admission was 105° F. and for three days she was repeatedly sponged. Her temperature during the time she was under observation ranged from 105° to 102°. Widal's reaction was not obtained. There was no headache, nausea, or epistaxis, and for a time no vomiting. The tongue was covered with a dirty brown fur and the appetite was bad. There was persistent diarrhœa, the bowels being opened from seven to ten times a day. In six consecutive weeks the motions numbered 51, 69, 58, 73, 80, and 104. The stools were fluid and contained but little fæcal matter. There was a little blood, not in clots, and there was a considerable quantity of mucus stained green. The passage of the motions was preceded by pain. At a later period they were dark in colour and often offensive. She vomited from time to time, but not every day. The diet consisted of milk, a little beef-tea, and plasmon. The medicinal treatment consisted of tincture of iodine and carbolic acid by the mouth and enemata of opium. She gradually sank and died from asthenia on the fiftieth day of the illness.

Necropsy.—At the post-mortem examination (which was performed by Dr. Hebb) the body was much emaciated; the surface and viscera were pallid and exsanguine. There was slight diffuse pigmentation of the thighs. The stomach was normal. There was arterial injection of the small intestine. The mucosa was normal. The large intestine was dilated and in a condition of ulcerative colitis throughout. The remaining mucosa was much thickened and standing up above the ulcerated gut from two- to three-eighths of an inch. Where the mucosa was absent the wall was quite thin, especially about the ascending colon and sigmoid flexure, the coil of the latter being firmly adherent by central union. The mesenteric glands were slightly enlarged. The other organs were normal.

CASE 4.—A man, aged 31 years, was admitted into Westminster Hospital on July 11th, 1903, suffering from diarrhœa of three months' duration. The temperature was but slightly elevated and never rose above 100° F. The motions averaged about four a day. There were no mucous shreds or other adventitious substances in the fæces. They contained the bacillus subtilis, the bacillus coli communis, and a large spore-bearing, non-liquefying bacillus. Cultivation yielded bacilli and micrococci, but no streptococci were present. The tongue was moist and clean and the appetite was good. There was no tenderness over the liver or the colon. The patient had never been abroad and had had no previous illness with the exception of an attack of bronchitis. Two brothers and one sister had died from phthisis. The patient was carefully examined but no lung mischief could be detected; there was no sugar or albumin in the urine and he was not markedly anæmic. He rapidly lost flesh and three weeks after admission suffered from persistent vomiting. He was put on milk diet and was given first salol and then cocaine with enemata of opium. He died on August 22nd, after an illness of about four months' duration. No necropsy was obtained.

CASE 5.—A woman, aged 30 years, was admitted into Westminster Hospital on April 20th, 1903, with diarrhœa of three weeks' duration, during which she had been confined to bed and had received medical attention. There was no family history of importance and her only previous illnesses were anæmia and occasional attacks of summer diarrhœa. She had never been out of England. On admission the temperature was 103° F. and it ranged from 100° to 102°

during the time she was in the hospital. Widal's reaction was not obtained. The pulse was 120, quick, and of low tension. The bowels were opened on an average six times a day. The motions were liquid and offensive and contained fæcal matter with a good deal of blood and but little mucus. There was vomiting but rarely more than twice a day and not every day, the vomited matter being green in colour. The patient was very weak and looked pale and wasted. There was no pain and she complained of nothing but the diarrhœa and general weakness. The tongue was pale, moist, and slightly furred. The appetite was good and she frequently asked for solid food. There was no abdominal distension and no tenderness could be detected. The liver and spleen were not palpable. A soft apical systolic murmur was heard but it was not conducted into the axilla. The treatment consisted of hypodermic injections of morphine with enemata of opium. The patient gradually sank, the temperature fell to 96°, and she died on May 7th after an illness of about five weeks' duration. No necropsy was obtained.

Remarks by Dr. MURRELL.—It is probable that all five of these cases are examples of ulcerative colitis, although in only two of them was the diagnosis confirmed by necropsy. The general course of the symptoms and the high rate of mortality confirm this view. Ulcerative colitis is by no means a common disease, at all events in London. I have consulted the records of the hospital and find that in 19 years, from 1884 to 1902 inclusive, there were only 15 cases, 11 in men and four in women, and of these there died five men and two women. In one of these cases, that of a man, aged 26 years, there were abscesses of the liver which after perforating the diaphragm opened into the lung and were partially evacuated through the bronchi. It is probable from the report of the necropsy that this was in reality a case of colitis dysenterica and should not be included in the list. That would give 14 cases of ulcerative colitis in 19 years with a mortality of 40 per cent. in the men and 50 per cent. in the women Including the present five cases we get a mortality of 46 per cent. in the men and 66 per cent. in the women.

The term "ulcerative colitis" or "simple ulcerative colitis" is admittedly a bad one, sanctioned only by long use, for ulceration of the large intestine may be dysenteric, tuberculous, or malignant in origin and is not uncommon in enteric fever. Considerable difficulty exists in distinguishing between different forms of inflammatory disease affecting the colon and post mortem it is impossible from an inspection of the large intestine alone to discriminate between ulcerative colitis and chronic dysentery. The clinical features of the disease, however, are sufficiently characteristic. Respecting its origin and causation little is known. It attacks both sexes but appears to be commoner in men than in women, for of 28 cases recorded at Guy's Hospital 15 were in men and 13 in women, whilst of the 19 cases at the Westminster Hospital 13 were in men and six in women, giving a total in 47 cases of 28 men and 19 women. The majority of cases occur between the ages of 20 and 30 years, but one of our cases was a boy aged 13 years. The onset is insidious, there is no rigor, and nothing in the early stage to distinguish it from an ordinary attack of diarrhœa. Pain is not a prominent symptom and as a rule there are no tormina nor is there tenesmus. No cause is as a rule assigned by the patient, although in one instance it is said to have followed an attack of enteric fever. One of our patients was in the habit of eating large quantities of a sweetmeat known as milk chocolate and the possibility of the disease having commenced as a tyrotoxicon infection was considered but there was nothing to support that view. The temperature was in most cases persistently high, whilst in others it was little above the normal. As a rule it was subnormal during the last 48 hours of life. In some cases vomiting was persistent, whilst in others it was absent or of rare occurrence. In all cases the patient rapidly lost weight and displayed signs of great weakness. There was little or no mental depression and most of the patients were cheerful to the end. There was no loss of appetite and a constant desire was expressed for more food and often for some particular article of diet. The diarrhœa was always the prominent feature and in most cases it was practically unceasing. The microscopical examination of the fæces gave no uniform result. In one instance the motions consisted of an almost pure culture of streptococci and it was thought that injections of anti-streptococcic serum might be indicated, but on the following day without any apparent reason the streptococci disappeared and were replaced by a totally different organism. It has been suggested that the ulceration of the colon may be due to an amœba but there is nothing definitely to support this view. Metastatic abscesses are rare and little or no change is found in the liver. It is said that the disease is associated in some way with kidney trouble but this is the exception and not the rule.

The post-mortem appearances present considerable uniformity and in both our cases there was a condition of ulcerative colitis throughout. In Dr. W. H. Allchin's classical case recorded in vol. xxvi. of the Transactions of the Pathological Society of London—the specimen is in the museum of the Westminster Hospital—there were in the ascending and transverse colons numerous circular punched-out ulcers varying in size from that of a threepenny-piece to that of a florin. In another case at the hospital, that of a woman, aged 50 years, the mucosa of the colon from the splenic flexure to the anus was extensively ulcerated, the remaining ragged mucosal areas being much thickened. The vermiform appendix is not infrequently involved and in one case it was glued to the pelvic brim by soft adhesions. It contained a fæcal calculoid of about the size of a grape-stone and from a minute aperture at the apex there was exudation of pus.

The duration of the disease is variable and in some cases it may extend over a period of three or four years. The treatment is essentially unsatisfactory; in our cases almost every drug or combination of drugs likely to be of use was tried, with the exception of injections of nitrate of silver, and they all failed. Whether surgical interference is likely to be more successful it is difficult to say. The operation commonly proposed is that of establishing an anastomosis between the ileum and the lower end of the colon, and failing this a right-sided colotomy. The operation performed by Mr. Spencer promises well, although in this particular case from unforeseen difficulties it was not successful. Continuous irrigation of the bowel either with plain water or boric acid solution is probably the key to the situation.

ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

A CASE OF SPONTANEOUS PERFORATION OF THE INTRA-PERICARDIAL PORTION OF THE INFERIOR VENA CAVA.

(Under the care of Mr. I. McW. BOURKE, late house physician.)

THE patient, a man, aged 60 years, was taken into the Royal Southern Hospital at 2 A.M. on a police ambulance. He had been seen to fall suddenly while walking along the street. Mr. Bourke saw him immediately after admission. He was lying on the ambulance talking very volubly but would tell nothing about himself except that he had been drinking. On examination there were no signs of injury. The pulse and respirations were quite quiet and the tension of the former was good. The patient expressed a desire to micturate and there being nothing in his condition to cause alarm he was allowed to do so. As the man lived close by Mr. Bourke arranged with the police to take him home. He was called five minutes later just as the patient was leaving and found him completely collapsed; he died in five minutes.

Necropsy.—At the post-mortem examination rigor mortis and post-mortem hypostasis were marked. There was some cyanosis of the head and the neck. In the right and left pleuræ there were old adhesions, these being scattered irregularly in the left. No fluid was present. Old scars were present in both apices of the lungs which were a little emphysematous. The left ventricle of the heart was hypertrophied and dilated. The pericardium was full of blood and two large masses of blood clot were causing considerable distension of the pericardial sac. At the anterior part of the inferior vena cava on lifting up the heart there was present a round patch where the tunica adventitia and part of the tunica media were absent, resembling a form of ulcer. The margins were not indurated nor was the surface of the patch ulcerated or sloughy; simply the tunica intima lay exposed, the patch being surrounded by no definite margin and the three layers gradually merging one into the other. In the centre of the patch there was a small perforation into the inferior vena cava which was

the cause of death. Two similar patches were present, one on the lower branch of the left pulmonary vein and the other on the posterior part of the pulmonary artery. The pericardium, apart from these erosion-like ulcers, was healthy. There was marked atheroma in the aorta, many patches being calcified. The liver was fatty with a thickened capsule. There were no adhesions. Its substance was soft and friable. The pulp of the spleen was somewhat fibroid; its capsule was thickened. There were signs of old perisplenitis. Nothing abnormal was found in the alimentary system. There were signs of early cirrhosis in the kidneys. The bladder, ureters, and suprarenals were normal.

Remarks by Mr. BOURKE.—If the perforation had occurred a few minutes later the patient would have died in the street. This would have been an unfortunate occurrence which I do not think one could have foreseen. I venture to publish this case as I have never come across a similar one neither can I find any record of such a case. I am indebted to Dr. J. Lyn Dimond, pathologist to the hospital, for the post-mortem notes of the case.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Cardiac Dulness in Cases of Cancer.—A Case of Properitoneal Hernia.

A MEETING of this society was held on March 8th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Dr. W. GORDON (Exeter) read a paper on the Cardiac Dulness in Cases of Cancer. He said that some years ago he had noticed in cases of gastric cancer, in which ordinary emphysema could not be thought to exist, that the cardiac dulness was greatly reduced or obliterated in the recumbent posture. After observing this in many instances he had rightly diagnosed cancer on the strength of it in five consecutive cases. Since then it had been noticed in many cases. (The normal cardiac dulness in the recumbent posture was not the same as in the erect posture. The absence or reduction of the dulness in cases of cancer was looked for in this recumbent posture only.) The following was a summary of results. Reduction or loss of cardiac dulness was common in cases of cancer, especially in cases of abdominal cancer towards their end. It was not, however, always present. It might precede cachexia, marked wasting, and loss of skin elasticity, but seemed absent in the earliest stages. If absent at first it might slowly develop towards the end. It might be found, but apparently rarely, in other diseases and it did not seem to occur in cases of sarcoma. When present in a doubtful case its presence was very suggestive of the existence of a cancer. When absent in a doubtful case of considerable duration it was slightly suggestive that the case was not one of cancer. In assessing the value of this physical sign it was of course necessary to exclude the existence of all ordinary causes of alteration of the area of cardiac dulness. The explanation appeared to be that the margins of the lungs extended across the front of the heart (this was found post mortem to be the fact) owing to a loss of elasticity in their substance similar to the loss of elasticity often observed in the abdominal skin in many cases of abdominal cancer.—The PRESIDENT said that Dr. Gordon had in his cases been most careful to exclude the diminution of the cardiac dulness such as might be due to emphysema of the lung, retraction of the heart, or to atrophy of the heart itself. The explanation given was that absence of cardiac dulness was due to a change in the lung tissue. He asked if any microscopical examination had been made of the atrophic lung tissue and if any change had been found. He suggested the importance of examining a large series of cases of cancer in order to find out in what proportion of cases this sign was present.—Dr. H. S. FRENCH asked whether Dr. Gordon laid stress on the absence of cardiac dulness when the case was first seen or only when the cardiac dulness disappeared under observation.—Dr. GORDON replied that he had examined the lung of one case microscopically but had been unable to demonstrate any change. He was of opinion that the loss of elasticity was a condition which could not be demonstrated by microscopical examination. Both the initial absence of the cardiac dulness and its disappearance under observation were important.

Mr. H. BETHAM ROBINSON read an account of a case of Properitoneal Hernia. He said that the patient, who had been the subject of left inguinal hernia for some years, was admitted into St. Thomas's Hospital with symptoms of obstruction of three days' duration. There had never been any difficulty in reducing the hernia and on admission there was no evidence of a hernia. Abdominal section was performed and a loop of small gut and matted omentum were found entering through a small opening into a pouch situated behind the left side of the lower part of the abdominal wall at the side of the bladder. On dividing this ring the congested and matted omentum could be withdrawn but not so the bowel which was firmly adherent to the sac. On opening up the inguinal canal the bowel presented at the normal site of the inner ring. The bowel here was quite black and lacerated easily on attempted separation. It was evident that the gut occupied, and was strangulated in, a pouch behind the abdominal wall and that it was gangrenous. Having packed round the inner opening with gauze the gut was separated from the sac, withdrawn through the inner opening, and brought out externally. Four and a half inches of gut were resected and an end-to-end junction was made. The patient died somewhat suddenly four hours after the operation. A careful necropsy showed that there was a bilocular sac; an inguinal pouch extended through the canal to the external ring imbedded in the elements of the cord; the testis was normally placed. This inguinal sac communicated by a small opening with another sac deeply placed behind the abdominal wall in the subperitoneal tissue; this inner sac was of an oval form and reached from the side of the bladder outwards into the iliac fossa. Its small inner opening in which the gut had been strangulated was the true internal ring. The case was thus a typical example of a properitoneal hernia, as described by Kronlein and Breiter. It differed, however, from the majority described by them in that the testis had properly descended but from the relation of the sac to the elements of the cord there was little doubt that the sac was a patent funicular process which had undergone dilatation in such a manner as to assume the bilocular form.—Mr. W. MCADAM ECCLES said that it was necessary to distinguish between the properitoneal and the interstitial form of inguinal hernia. He mentioned the great preponderance of the properitoneal variety in the male subject and said that it was his belief that this form only occurred in males. The interstitial variety, however, was proportionately more common in females. Probably in most if not all cases of properitoneal hernia there was some congenital defect in the descent of the testis and he asked if the testes on the two sides in Mr. Robinson's case were of the same size. The production of the interstitial hernia was often due to the blockage of a small external abdominal ring by a testis; the descent of viscera into the accompanying processus vaginalis caused dilatation of the peritoneal pouch in an upward and outward direction in a plane of the abdominal wall in front of the transversalis fascia. In many cases of interstitial hernia there was no prolongation of the sac into the scrotum. He suggested the importance of exploration in all cases of imperfectly descended testis accompanied by a definite hernia.—Mr. ROBINSON, in reply, said that a crural form of properitoneal hernia did occur in females. In his case the testes were normal.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Electric Currents of High Frequency.—Chronic Intestinal Obstruction.

A MEETING of this society was held on March 2nd, Professor JOHN CHIENE, the President, being in the chair.

Mr. H. J. STILES showed an infant after Ligature of Both Common Carotid Arteries for Chronic Hydrocephalus. The vessels were ligatured at an interval of two weeks in order to cut off the blood-supply to the plexuses and no mental disturbance ensued from the great limitation of the supply. The operation was completed nine weeks previously and the head had only undergone an enlargement of a quarter of an inch.

Dr. D. CHALMERS WATSON showed a woman suffering from

Exophthalmic Goitre of ten years' duration, and her son, aged ten years, who also showed symptoms due to alterations in the Thyroid and in the Parathyroid Secretion.

Dr. BYROM BRAMWELL showed a boy, the subject of Pancreatic Infantilism, who had shown great improvement under treatment by pancreatic extract. Dr. Bramwell said that this was a new disease and he had not seen any previous description of the affection. He had shown the same boy to the society two years ago as an example of infantilism and he had then expressed the opinion that the condition was due to defective pancreatic secretion. At that time the boy was 4 feet 4½ inches in height and weighed 4 stones 7 pounds. He looked like a boy of the age of 11 years, but was really then 19 years old. For nine years previously his growth and development had been arrested and he had suffered constantly from chronic diarrhœa, there being from five to six motions daily. The boy was perfectly well formed and presented no evidences of sporadic cretinism. The diagnosis which Dr. Bramwell then made was that the diarrhœa was due to defective metabolism caused by defective pancreatic secretion. This was shown by (1) the stools containing an excess of fat and on administering pancreatic extract this fat underwent a great diminution; (2) his urine on a milk diet contained a very small amount of phosphoric acid, but this increased greatly on giving him pancreatic extract; and (3) capsules containing iodoform and made of a covering insoluble in the gastric but soluble in the pancreatic secretion were given. On testing his saliva one hour after swallowing these there was no evidence of iodine or iodates; while after giving these along with pancreatic extract the reaction readily showed itself. Under treatment by pancreatic extract the lad had grown five inches and weighed 8 stones 8 pounds. He now looked much older in the face and the sexual organs had undergone a development, the pubic hair and descended testicles being now present. Dr. Bramwell thought that this new disease was curable through the administration of pancreatic extract.

Dr. JOHN THOMSON showed two cases of Infantilism (males, aged 18 and 24½ years respectively) attended with severe dyspepsia and diarrhœa of many years' duration and probably connected with some morbid condition of the pancreas.

Dr. ALEXANDER BRUCE (at the request of the council) gave a demonstration of Electrical Currents of High Frequency, with their mode of production and therapeutic applications. He said that for several reasons electrical treatment had been received by the medical profession with indifference and even contempt. The result had been, however, the discovery by the laity that there was something in such electrical treatment and consequently all kinds of companies had been started to carry on this treatment and most of these were run on commercial and unscientific lines. High-frequency currents were periodically alternating currents and the frequency of this alternation was exceedingly high. Such currents stimulated both nerve and muscle and the degree of stimulation bore a definite relation to the frequency of the alternation. The slower the alternation (within certain limits) the greater the stimulation—as, for example, from 2000 to 3000 per second. With currents of from 5000 to 10,000 per second there was a gradual diminution in the effect produced and with alternating currents above 10,000 per second hardly any stimulation was produced. No mechanical means that had been devised enabled them to obtain currents of a greater frequency than 10,000 per second. The spark, however, from a Leyden jar consisted really in a series of discharges varying from 900 to 30,000 million per second and such were named high-frequency currents. If a series of sparks were passed from the two poles of such a jar while each lasted only the fraction of a second a succession of rapidly dying down discharges was obtained. If it were so arranged that before each died down another took its place a fairly continuous periodic alternating current of enormous frequency was obtained. Such a current could not be directly utilised from the poles of the Leyden jar, but whenever such a discharge took place from the poles a similar discharge occurred from the outside of the jar and in all apparatus it was this discharge which was employed. Instead of employing Leyden jars, which readily broke, condensers were used. These consisted of sheets of tinfoil between plates of glass. The strength of these could be easily increased or lessened by varying the size of the tinfoil. To prevent short-circuiting the condenser was placed in a glass vessel filled with petroleum. One of the simplest means of charging the condenser was the static machine, as it was most convenient and broke down least easily; it was also inexpensive to work. The uncertainty of its working in damp weather was avoided by using one made of vulcanite plates. Current could also be obtained from the main. Another method of charging the condenser was the employment of an induction coil. It gave a very satisfactory result when worked by accumulators; the spark was better and much more rapid than with the static machine. Dr. Bruce had found that the ten-inch spark coil was better than a 16-inch one for ordinary work. A third method of getting the current into the condenser was by raising the ordinary current of 450 volts to 55,000 volts by means of a "stepper." In utilising the current so obtained a "resonator" was made use of; the most convenient form of this was in the nature of a couch which was practically another Leyden jar, the patient forming one side and the indiarubber cushion representing the glass. Such high-frequency currents acted as a general tonic to the system as well as in lessening congestive conditions of the mucous membrane and relieving the pain of neuralgia, neuritis, and locomotor ataxia; in rheumatic arthritis even permanent relief might be obtained. In acute muscular rheumatism the relief might be almost immediate, as in the case of lumbago. In chronic rheumatism benefit also resulted. In neurasthenia the pains were often greatly relieved and a general improvement resulted. In hysteria, however, such a benefit was not obtained—even in some cases the pain had increased in severity. There was also good reason to hope that it might do good in some forms of muscular atrophy, especially if primary. In the treatment of most cases not only a local but a general improvement in health resulted. In alimentary diseases Dr. Bruce had noted a marked improvement in cases of dilatation of the stomach when due to atony or neurasthenia. In the acute stage hæmorrhoids rapidly improved, as did also fissure of the anus and pruritus ani. Severe cases of cardiac disease with degeneration of the heart muscle did not seem to be benefited. He had not had experience of the treatment in tuberculosis, gout, diabetes, or cancer.—Dr. BYROM BRAMWELL, Dr. GARDINER, Dr. A. D. WEBSTER, and Dr. J. O. AFFLECK took part in the discussion which followed.

Mr. DAVID WALLACE read a paper on Chronic Intestinal Obstruction caused by malignant stricture of the large intestine. The paper was based upon a series of ten cases which had been operated upon by Mr. Wallace during the past year. In eight of the ten cases the actual cause of the symptoms was a malignant annular constriction and in the other two this was also most probably present, though not absolutely determined. The condition was really a cylindrical-celled epithelioma which caused stenosis with a most characteristic appearance of the bowel at the affected part, as if a string had been tied round it, and producing an hour-glass-like constriction. The new growth was very hard, small in width externally, but internally it was more spread out and fungating. The lumen of the tube was usually greatly narrowed even to the size of a crow quill; the proximal portion of the gut generally underwent great dilatation and its walls were much hypertrophied, whilst the gut on the distal side might be contracted. Though the disease must have lasted for some considerable time, yet the patient may have had no other symptom than perhaps a gradually increasing degree of constipation. This insidious progress of the disease was most misleading and unfortunately might cause such delay that curative treatment became impossible. The ages of the patients varied from 47 to 82 years; six were females and four were males. As regards the site of the tumour five were situated at the splenic flexure, three at the hepatic flexure, and two in the iliac portion of the colon (sigmoid flexure). This is contrary to the usual statement that 60 per cent. of all strictures of the large intestine (including the rectum) are in the sigmoid flexure. In the hepatic and splenic flexures the tumours were by no means easily palpated as they lay deeply and high up. In a case of chronic obstruction in a patient at or above middle life with no tumour palpable through the abdominal wall or per rectum the commonest cause was an annular malignant stricture. A history of increasing constipation with perhaps general abdominal pain and some loss in weight was all that could be elicited. As regards treatment, even if the first acute attack of obstruction were got over by such means as liquid food and small doses of morphine and enemata, there remained the still greater risk of a second

attack which might end fatally or if operated on then the disease must have invaded further and the result must be less favourable. In Mr. Wallace's opinion there was only one reason for delay and that was the advantage of operating during a quiescent period. The operation was then much more favourable than if done when the bowel was full of liquid fermenting fæces. Three operative procedures were possible—(1) excision and end-to-end anastomosis; (2) short circuiting; and (3) colostomy. It was usually stated that as the disease was situated most often in the sigmoid flexure the incision ought to be made in the left linea semilunaris at the level of, or below, the umbilicus. In the ten cases narrated there was no sufficient warrant for such a position. The incision should be made through the right rectus close to the linea alba, just missing the umbilicus, and with its centre opposite the umbilicus. Such an incision allowed of easy examination of the seats of disease. It also allowed the surgeon to open the transverse colon if the disease was on the left, or if on the right an ileo-colostomy could be performed. If the tumour was removable a second incision should be made over the tumour. In all cases the first incision should be large enough to allow of easy access, and an artificial anus in this position was favourable for cleanliness, while the rectus acted as a fairly good sphincter. The first of the three procedures—namely, colectomy—was the most favourable, but it had usually to be done secondarily. A large portion of the colon might require removal to get suitable gut for union. Absence of tension at the sutured part was a first essential. To "short circuit" meant almost invariably the junction of the ileum to the colon, and the most favourable junction was that of the ileum to the transverse colon. After such operation the tumour underwent frequently a great diminution in size and the patient's life might be prolonged for years. Colostomy was the least desirable of the operative procedures. The part of the colon to open depended on the site of the tumour but the farther from the cæcum the better, as the after-comfort of the patient depended greatly on the solidity of the fæces. In the majority of cases the gut should be opened at the time of operation. The ten operations which were performed included two colectomies, three ileo-colostomies, and five colostomies. With the two colectomies one patient lived 13 months after the operation; the other died on the fourth day from peritonitis. The tumour in the latter was at the splenic flexure and was very adherent. With the three ileo-colostomies there were two recoveries and one death on the fifth day. With the five colostomies there were four recoveries and one death in a patient 65 years of age who was operated on when very ill.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

PATHOLOGICAL SECTION.

Exhibition of Specimens.

A MEETING of this section was held on Feb. 19th, Dr. H. C. EARL, the President, being in the chair.

Mr. R. F. TOBIN, in discussing some points in the Pathology of Senile Hypertrophy of the Prostate, said that the specimens of this condition which came under examination were usually of two kinds:—One, a smooth-surfaced, easily enucleated adenoma, often of large size; the other, commonly a smaller mass with a rough surface, and looking like muscular tissue to the naked eye, and containing in its centre the prostatic urethra, torn portions of which, or of the membranous urethra, hung out at one end. He then showed some recently removed specimens with regard to one of which he said that when his finger in shelling out the adenoma had reached its posterior surface and was still between the layers of the surgical capsule, it opened into a sac in which about a hundred calculi, varying in size from that of a grain of snipe-shot to that of a swan-shot, were lying free.—Dr. W. J. DARGAN stated that the sections shown were made from the very outermost laminated layers of what seemed to be merely a fibrous envelope to the growth. They showed here and there atrophic glandular spaces lined in many cases by cubical cells, but greatly compressed and evidently undergoing involution. The presumption was that these were derived from greatly compressed prostatic tissue.—The PRESIDENT said that he agreed that senile enlargement of the prostate was of a glandular nature. He had not always been able to find glandular or muscular tissue in the fragment of tissue adhering to the prostates removed by operation. In a number of examinations he had only once found a small myoma. He mentiond a case of prostatic obstruction due to a cyst in the left lobe.

Mr. K. E. L. G. GUNN showed a case of Endothelioma of the Peritoneum occurring in a man aged 28 years, with extensive secondary growths in the lung, the liver, and the bronchial glands.—Mr. E. H. BENNETT asked whether the primary growth had been found, as all the growths shown seemed to be secondary.—Mr. GUNN replied that the most careful search for a primary lesion had failed, and, acting on the presumption that the growth had originated from the peritoneum itself, it had been labeled an endothelioma.

Mr. GUNN also showed a Femoral Hernia in which a distinct Secondary Ovarian Growth had occurred. The ovarian tumour had been removed 19 years ago. The hernia had been enlarging for a few months before the operation.

Dr. NEVILLE exhibited a Transplantation Cyst Tumour from the scar of an old (five years) ovariotomy. The tumour shown was of about the size of an ordinary fist and consisted of a congeries of small cysts, approximating 20 in number, varying in size from that of a pea to that of a large walnut. Microscopic examination showed a marked resemblance between the peculiar epithelium lining each cyst and that constantly found in Graafian follicles, the so-called membrana granulosa, specimens of which were shown.

The PRESIDENT showed a Teratoid Tumour of the Ovary. It was taken from a young woman who died with abdominal symptoms some months after its removal. Sections taken from different parts of the tumour showed small cavities lined by epidermis and having hairs and sebaceous glands in their walls. Other cavities were found to be lined with a columnar epithelium and glands resembling Lieberkühn's crypts opened into them. Bone, cartilage, masses of pigmented cells, adipose tissue, and tissue resembling that of the central nervous system were also found as well as groups of ganglionic nerve cells.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on Feb. 19th, Mr. R. Clement Lucas being in the chair.—Dr. Robert Hutchison showed a case of Progressive Cerebral Degeneration of the Family Type. The patient was a boy, four years of age, and was healthy until 10 months old when fits occurred on and off for some weeks. Two months ago he began to stagger when walking and he next developed some spasticity of the legs with mental apathy. The optic discs were becoming atrophic. There was another child in the family who became affected in the same way and at the same age. There was no history of syphilis.—Mr. J. Howell Evans showed a case of Symmetrical Bilateral Branchial Fistulæ with Symmetrical Bilateral Helical Fistulæ and Misshapen Aural Pinnæ.—Mr. J. Jackson Clarke showed an early case of Friedreich's Disease. The patient, who was a boy aged four years, had dropping of both feet, exaggerated knee-jerks, and Babinski's sign; the parents had also noticed some weakness of the left hand. A brother of the child had rigidity of the lower limbs and wasting of the muscles of the thumb. Symptoms began in his case at the age of six years. Mr. Clarke advocated in the early stages light instrumental guidance and afterwards tendon elongation and tenotomy followed by massage.—Dr. W. A. Wills and Mr. Douglas Drew showed a specimen of Secondary Angeio-sarcoma of the Lung. Mr. Drew removed the patient's left testicle for sarcoma in April, 1902, and there was no recurrence, local or general, until December, 1903. The case was thought to be one of empyema but when a rib was resected a new growth was discovered. Mr. Drew reminded the society that in the previous November he had exhibited the child as one of cure after removal of sarcoma of the testicle. On the last occasion on which he had seen the child Dr. Parkinson had found no evidence of disease in the lungs. The primary growth was adeno-myxosarcoma. The lung tumour resembled the primary growth in part but the rest of it was of the nature of angeio-sarcoma or endothelioma.—Dr. F. Parkes Weber showed a case of Anæsthesia and Recurrent Ulceration of the Gluteal Regions from Spina Bifida.—Dr. George Carpenter showed Microscopic Sections of the Heart and Kidney from a case of Acute Œdema of the Lungs and Sudden Death. The case was diagnosed during life as one of uncomplicated myocarditis.

The urine was loaded with albumin, there were no patellar reflexes, and the soft palate was thought not to move freely. There was no history of diphtheria, but taking the clinical findings into consideration the condition was thought to be diphtheritic.—Dr. C. O. Hawthorne said that cases of sudden syncope after diphtheria were well known and Dr. Carpenter's case in all probability afforded a demonstration of the manner in which these disasters were produced.—Mr. J. P. Lockhart Mummery read a paper on the Treatment of Hernia in Young Children.—Mr. Lucas alluded to the special difficulty in young children of isolating the vas deferens from the sac.—Dr. Hutchison showed the Organs from a case of Hemi-hypertrophy. The patient was a healthy well-developed boy with three small capillary nævi in the skin. The left arm and leg were hypertrophied and to some extent the trunk was also. The asymmetry of the limbs was apparently due to an increase of the subcutaneous tissues of the left side resembling a diffuse lipoma. He subsequently developed an empyema and died. The increased thickness of the left limbs was entirely owing to an increased deposit of subcutaneous fat. The bones were normal. Most of the paired organs were decidedly larger on the left side than on the right. The left lobe of the thymus was larger but the two lobes of the thyroid were symmetrical.

GLASGOW NORTHERN MEDICAL SOCIETY.—A meeting of this society was held in the Maternity Hospital on March 1st.—Dr. J. M. Munro Kerr read a paper introducing a discussion on the Diagnosis and Treatment of Contracted Pelvis. He said that exact measurement was of less importance where the degree of contraction was either very slight or very great, as in the former forceps were applied and in the latter Cæsarean section was performed, but in cases of medium deformity accurate measurement was essential. Amongst the more accurate pelvimeters those of Skutche and Faulk might be mentioned. Another point of equal importance was the size and consistence of the child's head and there were many difficulties in arriving at this. It had been said that the fœtal head was the best pelvimeter and one mode of determining suitable treatment was to determine the relation of the head to the pelvis. This might be done by combining practically the methods of Müller and Pinard. With the right hand the accoucheur took the Pawlic grip of the head and pressed the head into the pelvis, while with two fingers of the left introduced into the vagina he felt how the head engaged, and at the same time with the thumb he felt all along the brim and estimated the degree of overlapping. By this method the chances of the head passing the brim, the degree of traction required, and the consistence of the head could be estimated. Objections which might be raised to the method were that an anæsthetic was necessary and that the presentation might be breech. As a matter of fact an anæsthetic was not always necessary and a breech presentation might be converted before the thirty-sixth week by external version. Where the disparity between the size of the head and the pelvis was slight delivery might be attempted in the Walcher position. It was difficult to fix a degree of deformity below which spontaneous birth was impossible. Thus in two cases a rachitic dwarf delivered herself without assistance, the child weighing seven and a half pounds on one occasion, her conjugata vera being three and a half inches. Forceps of the Simpson or Milne Murray type were the best; Walcher's position was an advantage; an anterior parietal presentation was the most favourable and the lowest limit for forceps should be a conjugata vera of three and a half inches, and then only if the head were not too large for the pelvis. Version was more dangerous to the mother and the fœtal mortality was much higher. Induction of premature labour would be the ideal treatment if the cases were seen at a sufficiently early stage; it was undesirable to induce premature labour before the thirty-fourth week. Dr. Kerr's method of examining the relative sizes of the pelvis and the fœtal head was demonstrated on an actual case.—Dr. John Ritchie, Dr. George B. Todd, and Dr. Robert Jardine took part in the subsequent discussion.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Feb. 16th, Dr. W. Milligan, the President, being in the chair.—Dr. A. T. Wilkinson opened a discussion on Uræmia and he applied the term as covering a group of nervous phenomena most frequently associated with definite renal disease. It was advisable to distinguish, at any rate mentally, this condition from imperfect excretion, actual or relative, of the final products of nitrogenous metabolism, urea and its allies. In other words, uræmia was not to be regarded as the culmination of urinary failure but as a variety of toxæmia which might occur with very different degrees of renal inadequacy. This view was applied in turn to acute uræmia occurring in inflammatory states of the kidney, in puerperal eclampsia, in acute uræmia with little or no urinary failure, and uræmia as it was seen in chronic Bright's disease. The key to the solution appeared to lie in the hands of those who could study puerperal eclampsia where uræmic phenomena occurred with very varied degrees of urinary failure. The morphine treatment here found efficacious might have to be modified considerably in dosage before it could be applied to all cases of uræmia, as in acute Bright's disease, when the special toxæmia was conjoined with general excretory failure. Saline injections which helped to dilute the poisons and to aid their excretion were frequently useful in the uræmia of organic disease, indeed general dropsy, if viewed as nature's treatment, authorised this method.—Dr. W. E. Fothergill said that he greatly appreciated the way in which Dr. Wilkinson had distinguished the actual effects of renal inadequacy from other nervous phenomena due to various forms of toxæmia which often occurred together with renal inadequacy. The term "uræmia" was doubtless loosely applied to both these sets of conditions, while it should strictly be limited to the former. He agreed with Dr. Wilkinson that the study of puerperal eclampsia, a condition now recognised as separate from renal disease, might in time throw valuable light upon the various conditions now known as uræmia.—Dr. E. Vipont Brown spoke of the ease and frequency with which uræmia was overlooked owing to the protean character of its manifestations. After referring briefly to several cases illustrating this point he concluded by saying that the general practitioner would do well always to bear in mind the possibility that any case he sees may be uræmic, however unlikely at first sight such a supposition may appear to be.—Mr. Burgess drew attention to the remarkable absence of symptoms of uræmia in cases of suppression of urine following upon complete obstruction of both ureters, usually by calculi—a circumstance which seemed to indicate that uræmia depended upon some other cause than merely the arrest of the excretory function of the kidney. In uræmia or threatened uræmia associated with acute nephritis, he advocated relief of the acute renal tension necessarily present therein by surgical measures—incision of the renal capsule and parenchyma followed by drainage—as a perfectly rational treatment and one destined to be much more frequently carried out in the future.—Dr. Wilkinson replied.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on March 4th, Dr. Leslie Durno, the President, being in the chair.—The President opened a discussion on Tonsillitis in which he expressed his belief in a bacterial cause and disbelief in the value of gargles.—Dr. B. G. Morison showed a Specimen and Microscopic Section of a Mammary Cyst removed from a woman, aged 80 years. The skin over the cyst was red and so operative interference became necessary. On part of the cyst wall were villous growths similar in structure to those found in the bladder.

Reviews and Notices of Books.

Bacteriology of Milk. By HAROLD SWITHINBANK and GEORGE NEWMAN, M.D., F.R.S.Edin., D.P.H. Cantab., Medical Officer of Health of the Metropolitan Borough of Finsbury and formerly Demonstrator of Bacteriology in King's College, London. With Special Chapters also by Dr. NEWMAN on the Spread of Disease by Milk and the Control of the Milk-supply. London: John Murray. 1903. Pp. 605. Price 25*s.* net.

THIS book, which represents the first attempt that has been made to deal comprehensively with the bacteriology of milk and with the part taken by milk in the spread of disease, is one that will fill substantially a space in the medical library which has been left vacant for too long a time. Moreover, the authors may be justly congratulated on the result of their endeavour to place at the service of

medical officers of health and others who are interested in the matter a compendium of what is known at present of milk, whether as a food or as a means for the conveyance of disease. In accordance with the title the contents of the book may be considered in two sections. The first part, for which the writers are jointly responsible, deals with the chemical composition and the bacterial contents of milk, with technical details to be followed in its bacteriological examination, and with the fermentation processes which occur in milk and their economical import in industrial processes. The portion of the book for which Dr. Newman is alone responsible includes most valuable chapters on epidemics, either milk-borne or alleged with more or less reason to be so, and with the measures enforced by the State and adopted by private individuals with the object of insuring the purity of our milk-supplies. In the earlier pages of the book the writers give a detailed description of the technique which they have found most useful in the examination of milk and add the main results of their own extensive investigations into the natural rate of increase of bacteria in milk and cognate matters. A full descriptive catalogue is also given of the morphological, cultural, and other characteristics of the very numerous species of micro-organisms which are likely to be found in milk. Whilst this portion of the book is mainly for the bacteriologist, the special chapters by Dr. Newman on the influence of milk in the spreading of disease will be read with interest by all medical men and by the medical officer of health in particular. Dr. Newman deals first with the question of the conveyance of bovine tuberculosis by means of infected milk and after fully considering all the well-ascertained facts bearing on this matter he comes to the conclusion that at present it is not possible to gauge accurately the degree of danger to man arising from the use of milk from tuberculous cows, but taking a broad view of these facts he holds that "whilst tuberculosis is not chiefly spread by means of milk, there is unmistakeable evidence, derived from pathological and clinical experience, proving that tuberculous milk can, and does, set up some form of tuberculosis (bovine or human) in the bodies of man and other animals consuming the milk."

Careful consideration is next given to the question of "milk-borne" epidemics of the three important zymotic diseases—scarlet fever, typhoid fever, and diphtheria; the special characters of such outbreaks are referred to and numerous well-authenticated examples are given in detail of epidemics in which no probable cause other than a milk-supply could be found. Whilst there can be no question that such epidemics are, and not infrequently, caused by contaminated milk, the question as to whether the milk has become infected primarily because of similar disease in the cow or accidentally from some extraneous human source is one of more than merely academic interest in preventive medicine. An analysis of Dr. Newman's collection of recorded epidemics has led him to the conclusion that up to the present time the evidence forthcoming points in the direction of human rather than bovine infection and that when milk is apparently the cause of an epidemic of one or other of these diseases accidental contamination from a human source rather than disease of the cow supplying the milk is the cause which is to be sought for.

Taking the three diseases in detail we find that in 64 epidemics of typhoid fever caused by milk-supplies contamination from a human source was probable in 62, whilst in two epidemics no probable source of contamination of the milk could be found. With regard to "milk borne" epidemics of diphtheria the evidence is less conclusive. Dr. Newman quotes details of 18 outbreaks alleged to be due to a milk-supply; in these there was a probable source of human contamination in ten instances, in three instances no probable source of contamination of the milk could be found, and in the remaining five epidemics cows contributing to the milk-supply were found to be suffering from lesions of the udder. In none of the cases in which the cows were found to be suffering from lesions of the udder was there any proof that the disease was of such specific nature as to be a cause of diphtheria in man and Dr. Newman states that there are only four well-authenticated cases in which the bacillus diphtheriæ has been found in a suspected milk in spite of the very numerous occasions during the last few years on which milk which has been suspected of being the cause of an outbreak of diphtheria has been submitted to bacteriological examination. Dr. Newman gives details of 40 epidemics of scarlet fever in which suspicion was directed to the milk-supply. In 28 outbreaks there was good reason to believe that the milk might have been contaminated from a human source, in three cases no probable source of contamination of the milk could be discovered, and in the remaining nine cases the probable source of infection was held to be disease in the cow. Dr. Newman referring to the case of the classical "Hendon disease," considers that the existence of "cow scarlatina" has not as yet been definitely established. In addition to outbreaks of well-defined disease which have been attributed to milk-supplies, many instances of epidemics of "sore-throat" attributed to a similar source are quoted and the relation of milk to epidemic diarrhœa is fully discussed. Three chapters on the Control of the Milk-supply—(1) by the State, (2) by private enterprise, and (3) by the trade—conclude the volume.

In this review we have only indicated some of the more important matters dealt with by the authors but we can cordially recommend a careful perusal of the whole book to such of our readers as are specially interested in public health matters.

Disinfection and the Preservation of Food. By SAMUEL RIDEAL, D.Sc. Lond. Third Edition. London: The Sanitary Publishing Co., Limited. 1903. Pp. 494.

THE second edition of this useful and authoritative work was reviewed in THE LANCET of Dec. 31st, 1898, p. 1769. Since that time, of course, certain progress has been made in this branch of sanitary science and Dr. Rideal himself has gained considerable experience on special points, while he has been connected with researches on disinfectants and food preservatives which have yielded important results. From time to time he has communicated some of these results in our columns. We observe that the title of the present edition is "Disinfection and the Preservation of Food," instead of as heretofore "Disinfectants and Disinfection." The question of the use of preservatives in food has been brought prominently under public observation by the inquiry instituted some years ago by the departmental committee. We have expressed the opinion that the recommendations which this committee drew up were on the whole satisfactory and the delay in putting them into effect is serious and blameworthy. At present this country is without any special statute applying to the control of the use of preservatives in foods. Dr. Rideal remarks that it would seem impossible under modern conditions of life to do without some methods of keeping perishable articles of food without incurring a very large loss and it cannot be denied that with proper safeguards in some instances even chemical treatment may be desirable. The country is awaiting the action of a far too dilatory Government in order that these safeguards may be provided. The chapters dealing with the various proprietary disinfectants are of great interest and practically embody a history of the subject. The chapter on methods of analysis is of decidedly practical value and should serve as a trustworthy guide to those concerned in determining the actual germicidal value of disinfectant preparations. Here,

again, it seems to us that interference by legislation is needed in regard to the control of the sale of disinfectants. There are many worthless preparations on the market possessing little or no germicidal efficiency at all. Dr. Rideal has suggested that in making a germicidal determination pure phenol might be adopted as a control standard and the strength or efficiency of the disinfectant might conveniently be expressed, he thinks, in multiples of carbolic acid performing the same work. When, for example, a dilution of the disinfectant is obtained which does the same work as the standard carbolic acid dilution, the former is divided by the latter and a ratio termed the carbolic acid coefficient is thus found. We have dealt sufficiently with this new edition of the work to show the directions in which it will serve as an undoubted guide and as a source of instruction. The subject is most important and Dr. Rideal's contribution to it will be thoroughly appreciated by all those concerned not only in broad sanitary measures but in surgical science also.

LIBRARY TABLE

The Phase Rule and its Applications. By ALEXANDER FINDLAY, M.A., Ph.D., D.Sc., Lecturer and Demonstrator in Chemistry, University of Birmingham. London: Longmans, Green, and Co. 1904. Pp. 313. Price 5*s.*—Physical chemistry is growing apace and the results accruing from its study are of the most important kind. In many instances it is difficult to draw an exact line between physics and chemistry, but under the heading of physical chemistry would be included those considerations in which the laws or generalisations regarding properties of matter depend not merely on the masses or rates of motion of the objects studied but also on their composition and chemical nature. It is obvious from this definition that a very wide field for study is presented to view, a study which will be much facilitated by the issue of the series of volumes now promised by the above publishers, each of moderate compass and each dealing with one branch of the subject. Sir William Ramsay has written an admirable and historic essay and introduction to the whole series, the first of which is the book before us on Phase Rule. Next will be dealt with in future volumes, "Stoichiometry," "The Relation between Chemical Constitution and Physical Properties," "Electro-Chemistry," "Spectroscopy," "Thermodynamics," and, lastly, "Chemical Dynamics and Reactions." The publication of this series marks the first attempt to present the subject in concrete form and to consolidate the contributions regarding physico-chemical matters which are scattered throughout a number of scientific journals. In the interests of medicine we welcome this step since we must recognise the importance of physical chemistry in its relations to physiological problems. The Phase Rule deals with the study of the changes in the equilibrium existing between different substances. It defines the condition of equilibrium by the relation between the number of co-existing phases (ice, water, and vapour are three phases of the same substance) and the components (hydrogen and oxygen are considered as components but not constituents when by raising temperature to a certain point a state of true equilibrium between hydrogen, oxygen, and water vapour will be possible). The Phase Rule may thus be stated (p. 16): "A system consisting of n components can exist in $n + 2$ phases only when the temperature, pressure, and concentration have fixed and definite values; if there are n components + 1 phases equilibrium can exist while one of the factors varies, and if there are only n phases, two of the varying factors may be arbitrarily fixed." By the application of this rule it has been not only possible to render "the grouping together of a large number of isolated phenomena but the guidance it affords has led to the discovery of new substances, has given the clue to the conditions under which these substances can exist, and has led to the recognition of otherwise unobserved resemblances existing between different systems." Dr. Findlay in the preface states that the exposition of the Phase Rule and its application given in the text have been made entirely non-mathematical. The study of this subject is not simple and the busy medical practitioner could hardly be expected to devote more time to it than, say, the study of astronomy, though the importance of the Phase Rule to medical science cannot be doubted.

The Four Epochs of Woman's Life: A Study in Hygiene. By ANNA M. GALBRAITH, M.D. With an Introductory Note by JOHN H. MUSSER, M.D., Professor of Clinical Medicine, University of Pennsylvania. Second edition, revised and enlarged. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 243. Price 6*s.* 6*d.* net.—This book is designed to teach in popular form "the fundamental principles which underlie the various epochs" of woman's life (maidenhood, marriage, maternity, and the menopause). Professor Musser in a brief introductory note gladly commends the essay and says that the truths which it contains "should be known by every woman." It will be readily admitted that the subject is one which requires very delicate handling and although portions of the book are excellent there are others which might judiciously have been omitted.

The Prescriber's Pharmacopœia. Fifth edition. Bombay and London: Kemp and Co. 1904. Pp. 373.—This admirably compiled synopsis of the more recent remedies, both official and unofficial, is published by a firm of wholesale and manufacturing chemists and druggists of Bombay. The fact that it has reached a fifth edition shows that it is widely appreciated. We have carefully looked through the pages, which are well printed and arranged, and we find that the list of drugs given is very complete and in a line with recent developments. The index is particularly well done and the whole arrangement is such as to facilitate the work of reference. The preparations noted in the Indian and Colonial Addendum of the British Pharmacopœia are included. Students and practitioners of medicine in India may be congratulated upon having such a complete pharmacopœia at their disposal. It may easily take rank with English standard works on the subject.

A Guide to Urine Testing for Nurses and Others. By MARK ROBINSON, L.R.C.P., L.R.C.S. Edin. Bristol: John Wright and Co. 1904. Pp. 56. Price 1*s.* net.—This little book will be found very useful to the persons for whom it is written. It gives a short account of normal urine together with the various departures from the normal which may appear. Fallacies in testing are then noted, after which a description of the apparatus used in testing is given. The rest of the book is taken up with an account of the different substances to be tested for together with the methods of recognising their presence. Microscopical examination of the urine is purposely omitted as being beyond the scope of the work.

Dispensing made Easy. By W. G. SUTHERLAND, M.B. Aberd. Bristol: John Wright and Co. 1904. Pp. 102. Price 3*s.* 6*d.*—Dr. Sutherland's little book if carefully studied will certainly lighten the labours of the country practitioner. It does not pretend to teach the *haute école* of dispensing, such as the making of emulsions and the coating of pills, but it is full of practical hints and of ways in which to combine economy with efficiency. It would be well, we think, in a future edition to add to "Points worth remembering" the fact that bromides and iodides dispensed with alkaloids cause these latter to precipitate.

JOURNALS AND MAGAZINES.

The Medical Magazine.—The February number of this magazine contains a sensible article by Mr. J. Foster Palmer

upon the *rationale* of certain so-called drink cures. Mr. Palmer puts forward a clear classification of the various kinds of person subject to habitual drunkenness and shows in what cases there may and in what there may not be logical expectation of permanent benefit. He demonstrates the extremely transient nature of the change which is in too many instances vaunted as an example of "cure" and goes somewhat fully into the use of hypnotic suggestion as a remedy. In another article the use of Somnoform is described with various practical hints referring to methods of administration, after-effects, and cost. The author fails, however, to point out that almost identical and equally good results can be obtained by the use of pure ethyl chloride as a general anæsthetic. Ethyl chloride is the main constituent of somnoform and there is no valid reason for preferring to the pure drug a proprietary article with a fanciful name and an evil smell. In both cases there are strict limitations to be observed in the employment of the drugs for purposes of general anæsthesia, limitations which in the first attraction of a "new" and much belauded agent are apt to be overlooked.

Journal of the Irish Medical Association.—The principal contents of the March number are an account of the business transacted at the meetings of the council of the Irish Medical Association and a series of reports received from the various branches of the association. These reports are for the most part records of the work accomplished in connexion with increasing the remuneration and generally improving the position of the dispensary medical officers in the Poor-law service. It is well known that the association has frequently intervened with good effect in cases where inadequate salaries have been offered by boards of guardians and where an absence of cohesion among the members of the profession threatened to defeat efforts which were being made to obtain better terms. The editorial articles criticise recent proposals for altering the present systems of vaccination and death certification.

Analytical Records

FROM

THE LANCET LABORATORY.

PROTENE FOODS.

(THE PROTENE CO., LIMITED, 36, WELBECK-STREET, CAVENDISH-SQUARE, LONDON, W.)

THE above company was amongst the first in this country to employ the separated and dried proteid of milk in the preparation of foods by which their nutrient value was of course considerably enhanced. Some years ago we submitted several of these foods to analysis, the results showing in all cases a decidedly increased proteid value. Some important additions to the protene preparations have recently been made, samples of which have been submitted to us. We may refer to protene bread which gave us the following results of analysis: moisture, 43·48 per cent.; mineral matter, 3·04 per cent.; proteid, 36·08 per cent.; and non-nitrogenous matter, 17·40 per cent. Excluding moisture the bread would thus contain over 60 per cent. of proteid. According to the iodine test this bread is free from starch; it is thus suitable for the use of patients suffering from diabetes and other persons to whom it is an advantage to eat sparingly of food rich in carbohydrate. The texture of the bread is uniform and good. We have also examined "Alma biscuits" which similarly are free from starch whilst containing less fat than some of the other special food preparations. The "Welbeck biscuit" is a well-made and palatable biscuit containing about 25 per cent. of proteid. Lastly, protene cocoa gave, according to our analysis, the following results: proteid, 41·45 per cent.; fat, 22·50 per cent.; non-nitrogenous matter, 23 55 per cent.; mineral matter, 6·50 per cent.; and moisture, 6·00 per cent. According to this analysis the cocoa consists, roughly, of equal parts of cocoa and protene.

ALGERIAN BRANDIES.

(SOUTHARD AND CO., 2, ST. DUNSTAN'S-HILL, LONDON, E.C.)

We have submitted specimens of three vintages of this brandy to analysis and the results are perfectly consistent with those yielded by genuine wine spirit. The brandy of vintage 1900 gave the following results: extractives, 0·62 per cent.; mineral matter, 0·02 per cent.; and alcohol, by weight 50·09 per cent., by volume 58·92 per cent., equal to proof spirit 101·51 per cent. As regards secondary products the following were the results expressed in grammes per 100 litres absolute alcohol present: volatile acidity reckoned as acetic acid, 40·80; aldehydes, 17·00; furfural, 1·10; ethers reckoned as ethyl acetate, 62·73; and higher alcohols, 170·00. The sample of the vintage 1901 gave the following results on analysis: extractives, 0·68 per cent.; mineral matter, 0·02 per cent.; and alcohol, by weight 49·16 per cent., by volume 56·98 per cent., equal to proof spirit 99·86 per cent. The secondary products were found to be as follows given in grammes per 100 litres of absolute alcohol present: volatile acidity reckoned as acetic acid, 40·80; aldehydes, 8·50; furfural, 1·10; ethers reckoned as ethyl acetate, 47·60; and higher alcohols, 85·00. The sample of vintage 1902 gave the following results on analysis: extractives, 0·54 per cent.; mineral matter, 0·01 per cent.; and alcohol, by weight 50·52 per cent., by volume 58·36 per cent., equal to proof spirit 102·28 per cent. The secondary products given in grammes per 100 litres of absolute alcohol present were as follows: volatile acidity calculated as acetic acid, 30·60; aldehydes, 8·50; furfural, 0·85; ethers reckoned as ethyl acetate, 55·35; and higher alcohols, 85·00. These figures coincide with those obtained with genuine though somewhat young brandies. The alcoholic strength shows that all these brandies have not been reduced to a strength suitable for consumption. There is no doubt that they would improve with age and develop a finer bouquet and flavour than they exhibit at present. Compared with average Cognac brandies the ethers are decidedly low. These Algerian brandies consist of spirit derived entirely from the grape. The test both of palate and of analysis leads to this conclusion.

"FERRUBRON" PAINT.

(THE "FERRUBRON" MANUFACTURING CO., LIMITED, 143, QUEEN VICTORIA-STREET, LONDON, E.C.)

Ferrubron paint has for its basis a substance which is entirely different from lead or zinc compounds. As a matter of fact the basis consists of a native peroxide of iron. It is a glistening mineral, having the beautiful lustrous appearance of native antimony. The pigment made with it possesses good covering power and on drying leaves a uniform silvery film. It does not appear to tarnish. Of the shades submitted to us we have the most favourable opinion of the silver-grey. The paint is absolutely non-poisonous. Its permanency as regards its peculiar metallic lustre is a valuable feature of ferrubron paint. It withstands heat and may be used for radiators or for painting metal surfaces of stoves or laboratory and hospital appliances. It beautifies all metal work and should prove to be a sanitary adjunct in the hospital ward or operating theatre, for while it is durable the finished paint is washable and presents a clean and attractive appearance.

DROITWICH BRINE CRYSTALS.

(WESTON AND WESTALL, LIMITED, 41, EASTCHEAP, LONDON, E.C.)

This salt is obtained by the evaporation of Droitwich brine which, as is well known, is used in the form of a bath for the treatment of rheumatic affections. The evaporated

salt occurs in small cubes and on analysis it gives the following results: sodium chloride, 96·23 per cent.; calcium chloride, 0·055 per cent.; sodium sulphate, 0·09 per cent.; and moisture, 3·60 per cent. The crystals are contained in bags holding 14 pounds. In preparing the salt bath two pounds of the salt are dissolved in each gallon of water. In addition to the use of this salt for rheumatic affections it may be advantageously used in the preparation of the artificial effervescing Nauheim bath.

SANGUINOSA.

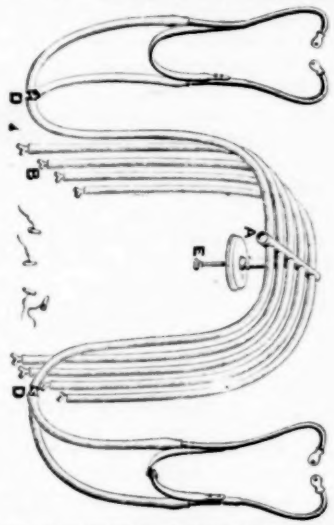
(THE SANGUINOSA CO., 79, MARK-LANE, LONDON, E.C.)

Sanguinosa is described as "The Vegetable Invigorator" and according to our analysis and examination it has the composition and character of a red wine. The analysis was as follows: alcohol, by weight 12·38 per cent., by volume 15·30 per cent., equal to proof spirit 26·82 per cent.; extractives, 2·94 per cent.; mineral matter, 0·370 per cent.; volatile acidity reckoned as acetic acid, 0·096 per cent.; fixed acidity calculated as tartaric acid, 0·20 per cent.; and sugar, 0·124 per cent. The preparation is stated to possess value as a tonic on account of the organic iron present. This iron amounted according to our analysis to 0·01 per cent. reckoned as ferric oxide. The preparation thus contains no more iron than is found in many red wines of the burgundy type. We doubt whether sanguinosa is of any value as regards its iron. Generally speaking, there is much nonsense talked about the value of small quantities of iron in wine when as a matter of fact there is much more iron contained in the daily average diet than in a dozen bottles of wine of the so-called ferruginous type.

New Inventions.

A MULTIPLE STETHOSCOPE.

THE idea of arranging a stethoscope so that several students can listen to a patient's chest at the same time is a good one; unfortunately, the contrivances hitherto introduced have not proved successful. We submitted the instrument under consideration, which has been designed by Dr. W. G. Aitchison Robertson, to a trial before a class of students but the result was not satisfactory. The sounds were not heard nearly so distinctly as by means of the ordinary binaural stethoscope. The apparatus could be improved by making the Y-shaped metal pieces which are inserted into the ends of the rubber tubes larger; the tubes attached to the students' stethoscopes were all too large to grasp the attachments firmly. The illustration clearly shows the construction of the stethoscope, which is made by Mr. T. Hawksley, Oxford-street, London.

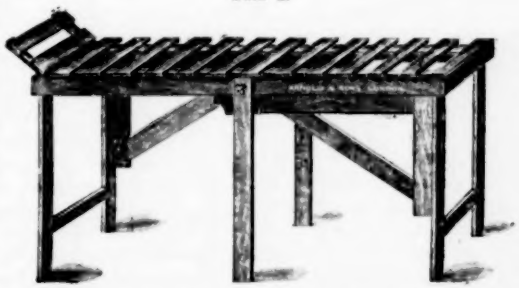


A, Supporting piece for tubes. B, One of the Y-shaped pieces to which ordinary stethoscope tubes can be attached as at D. E, Chest-piece and phonendoscope.

AN IMPROVED PORTABLE OPERATION TABLE.

THIS table is so constructed that it can readily be adjusted to the usual positions required. It is thoroughly substantial and rigid in each position and capable of supporting a weight of 20 stones; it can be folded into a comparatively small compass for carrying in a canvas case or satchel; it always folds up accurately and there is no likelihood of its being strained or bulged. When it is in its case it is not too heavy to move about with one hand. Its mechanism is so simple that it can be placed in the desired position or folded and put away in less than two minutes. It can be made in wood, polished or enameled, or in metal, nickeled or enameled, and is comparatively inexpensive. As shown in Fig. 1, it consists of a horizontal

FIG. 1.



frame hinged in the centre; the legs and struts are also hinged and the cross laths of the table are so constructed that the whole falls accurately together. The Trendelenburg position, as shown in Fig. 2, is secured by lifting the table in

FIG. 2.

the centre and is maintained by a strut secured with thumbscrews. By a rack arrangement the portion corresponding to the upper position of the body can be raised to any position from the horizontal to the erect. If desired, a pair of crutches for the lithotomy position can be affixed to the lower end.

Messrs. Arnold and Sons of West Smithfield, London, E.C., have made the table at my suggestion and after 12 months' use I find it in every way satisfactory.

J. LIONEL STRETTON,
Senior Surgeon, Kidderminster Infirmary and Children's Hospital.

Kidderminster.

THE LANCET.

LONDON: SATURDAY, MARCH 12, 1904.

The Health of the Navy.

HAVING regard to our late experiences in South Africa and the striking events that have still more recently focussed public attention on the naval operations in the Far East it is no wonder that an unusual degree of interest should just now be taken in all that concerns the naval and military services of this country. The sweeping and radical reforms proposed by the War Office Reconstruction Committee and the debates in connexion with the navy and army estimates have also served to rivet public attention on these services at the present time. We are passing through a transition stage and from whatever side matters are regarded it is clear that the nation is confronted with many questions of vital importance about which it will shortly have to make up its mind. Let the political views be what they may, there is a side from which the maintenance of efficiency in both peace and war must be approached and considered—namely, that of health and hygiene. This is a matter of growing importance which can never be lost sight of and it is one, moreover, which no Government can afford to ignore. We are led to these reflections from the fact that at the present moment we have before us the Statistical Report of the Health of the Royal Navy for 1902 and that, as regards the army, we must be content to remain in ignorance of what is proposed to be done with its medical service until Part III. of the War Office Committee's report is published.

In THE LANCET of March 5th, p. 680, we briefly called attention to the Statistical Report of the Health of the Royal Navy. We may here add that, according to that report, the ratio of cases per 1000 of force for 1902 shows a reduction on all stations except the Home and the East Indies; that the invaliding ratio of the total force also shows a decrease (the highest invaliding-rate was on the Cape of Good Hope and West Coast of Africa station); and that the death-rate, which was 5·92 per 1000 for 1902, showed a slight decrease when contrasted with the last five years' ratio. The highest death-rate appears on the Pacific station, due to the unfortunate loss of the *Condor* and not to medical reasons. But it is not so much the purely statistical part of the report that will hold the medical reader's attention. Statistics can scarcely be styled a form of light literature and we do not find that even those deeply concerned in a subject are much prone to argument about arithmetical tables, however germane to the topic, but there are several interesting and significant papers in the appendix to this report for 1902 which claim consideration at the present time. There is no more difficult problem, for example, than that of the treatment of wounded in action on board a modern battleship, which forms the subject of a carefully thought out article by Fleet-Surgeon P. B. HANDYSIDE of H.M.S. *Vengeance*. Accepting the view of those familiar with the construction of a modern battleship and the requirements of modern surgery that it would not be possible during an action to remove wounded men to a place of safety below the waterline or armoured deck and there to perform surgical operations, Fleet-Surgeon HANDYSIDE proceeds to discuss very carefully and from a practical standpoint what can be done and what are the duties of medical officers before, during, and after a naval action. Of course, the object aimed at in our modern warships is to make them the most perfect fighting machines possible, but that is no reason why the attempt should not also be made to secure the best hygienic arrangements attainable in the circumstances. Moreover, we are not happily always at war and naval engagements do not last long when we are. It consequently appears to us that a naval medical officer might be usefully consulted in matters of naval construction and plans. We refer our readers to Fleet-Surgeon HANDYSIDE'S contribution to the blue-book under notice as showing the value of hearing a medical opinion upon such matters.

All who are interested in the genesis and evolution of the Royal Navy Medical Service, naval hygiene, and the internal economy of His Majesty's navy will turn to "Notes and Extracts from Journals" extending from 1793 to 1856 compiled by Deputy Inspector General T. J. PRESTON. Like all stories worth the telling, the moral to be drawn from this paper lies on the surface, and that moral is that the navy has steadily progressed in matters medical and hygienic. We may regret that the extracts from the journals are so short and scanty, such mere samples, that they only whet the appetite for more, but sufficient evidence is marshalled to prove the proposition. The medical, bacteriological, and other papers in the appendix to the report strike us as being unusually good and the results obtained in some of the surgical cases recorded reflect great credit on the medical officers concerned. We may conclude with what we desire to emphasise—viz., the contrast which exists between the conditions affecting the Royal Navy of the present day as compared with those which obtained in 1793–1856 for example, to take the date dealt with in Deputy Inspector-General PRESTON'S interesting communication. The advances that have taken place in naval hygiene, applied medical and sanitary science, and we may say in every respect, have been great and mainly in proportion to the increased and increasing position and influence of the medical service. This is a thing worth noting by our readers, especially by those who have the education of medical students in their charge. It may be possible, indeed it may be easy, to pick holes in the Royal Navy Medical Service, but it is a service of great possibilities and promise.

The Medical Officer of Health: His Report and his Sanitary Authority.

A RECENT meeting of the Newbiggin (Northumberland) district council has revealed a misapprehension upon the part of the council with regard to its own duties and the position and duties of its medical officer of health, which deserves some serious notice, if only to furnish arguments for those who would prevent other sanitary authorities from falling into the same error. It appears that the

medical officer of health of the district, Dr. VINCENT BURROW, had at a previous meeting submitted his annual report, when the council had taken the significant step of referring it back to him in order that he might delete or alter portions with which the council did not agree. This the medical officer of health of course refused to do. At a subsequent meeting of the council held on March 2nd Dr. BURROW pointed out that it was his duty to make his report as to matters which, in his opinion, were unsatisfactory within his district and to do so without regard to the views of the council. He further pointed out that were the report to be made under the conditions which the council sought to impose upon him it would become the council's report instead of that of its medical officer and he firmly refused to forfeit his self-respect and the respect of the council by deleting or altering any portion of what he had written, since he believed that all the report was accurate and necessary. Even then the members of the council did not apparently appreciate the position in which they were placing themselves, for the subject was further discussed until the clerk of the council, on being appealed to, gave the only possible opinion that the medical officer of health was bound to submit his report and that the council had absolutely no control over it. The medical officer of health will therefore have his way and will be allowed to present his report ungarbled. So far all is well, but the episode provides food for serious reflection. The same situation has arisen in other places and it is to be hoped that a little ventilation of the matter may prevent sanitary authorities from stultifying themselves in the future in a similar way. That a local sanitary authority should apply, or should attempt to apply, pressure to the medical officer of health is, apart from the insult to him contained in the suggestion that he might be found willing to yield to such pressure, a matter of prime public importance. Newbiggin may not rank among the great English watering-places but none the less what has happened there may happen elsewhere. Newbiggin, with a population of a little over 2000 inhabitants, is under the care of an urban district council but the Acts of Parliament which govern it are the same as those which apply to other localities and its medical officer of health, no doubt, occupies a similar position to that of many others who are not independent of the necessity for private practice. That position in a small district even more than in a large one has the disadvantage that attempts to influence its occupant, which cannot be made publicly without attracting attention, can there be brought to bear in private with greater ease. The medical officer of health, as is well known, has to furnish every year primarily to the sanitary authority a report of the district under his charge but he has also to send copies of that report to the Local Government Board and to the county council. With regard to these the Local Government Act, 1888, provides that "If it appears to the county council from any such report that the Public Health Act, 1875, has not been properly put in force within the district to which the report relates or that any other matter affecting the public health of the district requires to be remedied the council may cause a representation to be made to the Local Government Board on the matter." That is to say, the report of the medical officer of health is for the information of the Local Government Board and county authorities and is quite useless unless it is a straightforward and ungarbled document. There are, no doubt, many sanitary authorities the members of which would be glad if the drawing-up of the report upon the hygienic plight of the community for the information of such critics as the Local Government Board and the county council were to be intrusted to them and not to the medical officer of health. The legislature has, however, thought differently and in the interest of the public has intrusted the responsibility for such reports to men who are qualified by their professional training to make them efficiently and who will uphold the traditions of their profession by making them honestly. We commend the action of the Newbiggin district council to the attention of the Northumberland county council and of the Local Government Board. The latter body must know as well as we do that attempts to persuade the medical officer of health to water down an inconveniently outspoken report have occurred before. Such a misapprehension as has arisen in one place as to the relative positions of the council and the medical officer of health may arise in another. The Local Government Board has power to prevent such recurrence by intimating to local authorities that pressure or persuasion of any kind whatever put upon medical officers of health in order to induce them to issue "faked" reports will be viewed by the Board with grave displeasure.

The Etiology of Hernia.

MR. R. HAMILTON RUSSELL took the Congenital Origin of Hernia as the subject of his presidential address to the Medical Society of Victoria, Australia, on Jan. 6th and worked out his theory of their congenital origin more elaborately than on any previous occasion. We publish his address, but little abbreviated, on p. 707 of this issue of THE LANCET.

The question of the mode in which a hernia is formed has long exercised inquiring minds but it can hardly be said that we have yet arrived at finality. The earliest opinion held is shown by the names given in popular language to the lesion, as in English the word "rupture" expresses the idea of a breaking forth of the bowel from within the abdomen. The German word "Bruch" is of similar meaning and the same idea is found in many languages. The name seems to imply that the chief cause is excessive pressure within the abdomen and even our present knowledge justifies us in saying that whatever may be the predisposing and assisting conditions a marked increase in the intra-abdominal pressure is probably responsible for a very large proportion of the herniæ seen. In very many cases there is a definite history of coughing or straining having immediately preceded the development of the hernia. Yet it must be recognised that contributory conditions must be present before a hernia can be formed. The first and most obvious suggestion is that the abdominal wall has been abnormally weak at the place where the hernia appears and that this local weakness is a real adjuvant in the production of a hernia is seen in the formation of traumatic herniæ; for instance, a laparotomy has weakened the abdominal wall by section of its ligamentous and muscular fibres

with the result that the injured tissues are unable to resist even the normal pressure existing within the abdomen and a hernia results. That weakness is probably of etiological importance in other herniæ also is shown by the fact that they occur in certain well-defined spots where there is a loss of continuity of one or more structures forming the parietes of the abdomen. At the deep inguinal ring the wall is evidently defective for the purpose of allowing the spermatic cord to pass through. It is true that arrangements have been apparently specially made to minimise the risk of a hernia, for the two inguinal rings are not opposite one another and the abdominal pressure tends to keep together the anterior and posterior walls of the inguinal canal. The crural ring is so patent that it seems to invite a hernia and the umbilicus, too, is evidently a weakened spot. Thus it is true of the usual forms of herniæ that they occur in sites where the abdominal parietes are for one cause or other less strong than elsewhere. This is also true of the rarer herniæ, such as obturator hernia and that occurring through Petit's triangle in the interval between the latissimus dorsi and the external oblique muscles. In spite of these important and obvious facts it must be acknowledged that the etiology of hernia is not so simple of determination as it would appear to be, for weakness of the abdominal wall, even when accompanied by an excessive pressure from within, will not suffice to explain the occurrence of the vast majority of herniæ. It is a remarkable fact that if in the dead body the abdomen is opened and an attempt is made to produce a hernia by pushing the bowel through one of the usual hernial apertures it will nearly always be found impossible to bring the bowel down sufficiently, for the mesentery is rarely long enough to permit the bowel to pass through the deep inguinal ring or the crural ring. When this fact was first observed it was thought that a great predisposing cause of hernia was an unduly long mesentery. Time has not confirmed the importance of the length of the mesentery. In the living body the extensibility of the mesentery is probably far greater than post mortem, and when other conditions are favourable the shortness of the mesentery will not serve to prevent the formation of a hernia. We may therefore put aside as comparatively unimportant the length of the mesentery. What further condition have we to offer as predisposing to the production of a hernia? It is clear that in the condition which is usually known as a "congenital inguinal hernia" a structure is present which must assist immensely in the production of hernia; we find a sac already formed, the processus vaginalis. The frequency of this variety of hernia in infants proves clearly the very great assistance that this gives in the formation of hernia. Mr. RUSSELL accordingly advocates the idea that all, or almost all, herniæ are "congenital" in origin—that is to say, that the bowel always finds waiting for it a sac which has existed from birth. This opinion he first advanced in 1899 and in several papers since he has elaborated the idea and applied it to herniæ to which, at first, it did not seem applicable. Thus he explains femoral hernia as resulting from the existence of a sac arising at an early stage of development, when the limb buds are being formed; as a limb bud arises he suggests that a diverticulum of the pleuro-peritoneal cavity is, as it were, drawn into it. The many varieties of inguinal hernia owe their origin, according to Mr. RUSSELL, to corresponding varieties of sacculation of the peritoneal pouch. Thus he accounts for the interstitial and properitoneal herniæ by supposing that a portion of the descending peritoneal sac has become caught by the developing abdominal wall and he looks upon the connexion of an interstitial hernia with an imperfect descent of the testis as the associated results of a common developmental cause.

There seems to be a difficulty in explaining a direct inguinal hernia by this theory, but Mr. RUSSELL has met with a case in which there was a peritoneal pouch in the situation of a direct inguinal hernia though no hernia had ever been present. To express in a word Mr. RUSSELL'S theory, he maintains that "acquired hernia does not exist." There is much to be said for this theory; it would serve to explain many anomalies that we meet with and to clear up many obscurities in connexion with herniæ. The proof of the theory, if it can be proved, will apparently depend chiefly on the demonstration of the frequent existence of these peritoneal pouches apart from actual herniæ. This should not be difficult if the theory be true. Herniæ do, however, occasionally exist, as of the cæcum, which possess no sac, and therefore there must be exceptions to the explanation which Mr. RUSSELL advances.

Annotations.

"Ne quid nimis."

ANNIVERSARY DINNER OF THE MEDICAL SOCIETY OF LONDON.

THE Medical Society of London, under the chairmanship of Dr. F. de Havilland Hall, the President of the society, celebrated its 131st anniversary dinner at the Whitehall Rooms, Hôtel Métropole, on March 8th. The great banqueting hall was crowded, the exact number of guests and members present being 205. Amongst the company were the Presidents of the Royal College of Physicians of London, of the Clinical Society, of the Gynæcological Society, of the Harveian Society, of the Hunterian Society, of the Irish Medical Schools' and Graduates' Association, of the Obstetrical Society, and of the West London Medico-Chirurgical Society; Sir A. Rücker, Professor T. Clifford Allbutt, Professor Howard Marsh, Sir John Wolfe Barry, Mr. J. W. Comyns Carr, Dr. W. H. Allchin, Sir Alfred Cooper, Dr. J. K. Fowler, Mr. A. Pearce Gould, Mr. J. H. Morgan, Sir Henry F. Norbury, K.C.B., Sir H. Oakley, Sir G. S. Robertson, K.C.S.I., Mr. Mayo Robson, Mr. Edmund Owen, Sir Thomas Smith, Bart., the Mayor of St. Marylebone, Sir William Taylor, K.C.B., and Dr. S. West. The toast of the evening, that of "The Medical Society of London," was proposed by Professor Allbutt. The great size of the banqueting room somewhat marred the effect of Professor Allbutt's speech but to judge from the applause of those seated near the orator his opinions were received with great approbation. Professor Allbutt's remarks really amounted to an able denunciation of the present-day fashion of specialisation in the medical world. He contended that a stand should be made against the ever-widening division between medicine and surgery and he pointed out that the very name of the medical society implied the unity of the profession which he was so anxious to urge on the notice of his audience. The President of the Medical Society, in responding to this toast,

elicited loud applause on his informing his hearers that the name of Lord Lister had been placed on the roll of honorary members of the society. Mr. Owen, in a characteristically witty speech, proposed the health of the guests. In the course of his remarks on Sir William Taylor, the Director-General of the Army Medical Department, he observed that he was a splendid recruiting officer because he was attracting to his department some of the best men from the hospitals. Sir John Wolfe Barry, who was the first to respond to this toast, remarked that although surgeons had but little choice of the materials on which they operated, nevertheless engineers were also limited in choice in regard to securing foundations for their structures. Sir William Taylor, who next spoke, made some amusing allusions to the temporary difficulties caused by the general reorganisation by which, he said, everyone at present seemed to be affected. After Mr. Comyns Carr had also replied to the toast of "The Guests," Dr. Allchin proposed "The President" and this having received a suitable acknowledgment brought the evening's proceedings to a close. The great success of the dinner was very generally acknowledged to be due to the organising talent of the registrar of the society, Mr. W. R. Hall.

THE METROPOLITAN STREET AMBULANCE ASSOCIATION.

WE are glad to be able to report that the first part of the programme undertaken by that young and very vigorous body the Metropolitan Street Ambulance Association has been accomplished with encouraging results. Of the 118 gentlemen who have just been elected upon the London County Council 104 have given satisfactory replies to the question sent by the association to them during their candidature asking, "If elected to the London County Council, will you interest yourself in securing the establishment by the Council of an efficient street ambulance service for London?" Nor do these figures tell the whole story, for the cynical may say that they do not greatly regard election pledges. But, as a matter of interesting and important fact, many of the answers received from the 118 members of the new County Council show that the writers take as warm an interest in the question of an adequate ambulance service for London as does the medical profession itself. There is, therefore, every reason to hope that the London County Council will without delay take steps to ascertain what practical course can be adopted. A detailed scheme will be prepared by a subcommittee of the Metropolitan Street Ambulance Association for presentation to the Council at an early date and much will depend upon the character of this scheme. If it is simple, economical, and practical there is no reason to doubt that the London County Council will look upon it with favour and we do not see why immediate results should not follow. It is important to remember that a body like the London County Council will be greatly strengthened in any course it may decide to pursue if it feels that it can rely on the support of the whole medical profession of London in a question of this nature. Medical men can promote the movement by sending evidence showing the lack of proper ambulance accommodation in their neighbourhoods to Dr. Arthur W. James, 69, Gloucester-terrace, Hyde Park, W., who is acting as honorary secretary of the Metropolitan Street Ambulance Association, as well as by enrolling themselves as members of the association—a proceeding for which there is no charge. As a matter of fact, not much more evidence than the endorsement of the medical profession is required to show that the needs of London for ambulances of all sorts are almost unsupplied. The lack in the metropolis of adequate provision for dealing with street accidents is deplorable, while facilities for using such supply of ambulances as we have are entirely absent. Suppose a street accident to occur within ten minutes' walk from an ambulance station—which is supposing a great deal—how long would it be before the victim was in a stretcher? A policeman must be found. When found he must stay with the injured man while another constable, or some member of the public, goes for the ambulance. And when it arrives how long will it be before the patient is in the hospital? In New York the horse ambulance system originated in 1870 and proved so valuable that many other American cities quickly adopted the same methods. In Vienna the service was established in 1881 and in Paris in 1888, while in Liverpool the horse ambulance for street accidents was first tried in 1884 and ever since has proved to be invaluable. Horse ambulances summoned by telephone have long been looked on as an indispensable feature of hospital work in Birkenhead, Manchester, Newcastle, Huddersfield, Bolton, Burnley, Hull, Sheffield, Leeds, Wolverhampton, and Ipswich. Bearing in mind the loss of time occasioned in London by the use of the hand ambulance it is not surprising that from 8000 to 10,000 street casualties have to be removed each year in cabs or in other unsuitable conveyances.

CEREBRAL SYMPTOMS AFTER ABSORPTION OF DROPSY.

AT the meeting of the Société Médicale des Hôpitaux of Paris on Jan. 15th M. Pierre Merklen and M. Jean Heitz called attention to the fact that the absorption of dropsy, whether cardiac, hepatic, or renal, may give rise to cerebral symptoms, such as coma, Cheyne-Stokes respiration, delirium, or convulsions. These may prove fatal, terminate in recovery, or cease with the return of the dropsy. This fact was observed by old writers but it appears to have passed out of notice. Graves has remarked that eclampsia sometimes is of favourable significance in regard to recovery from dropsy. Rilliet has observed that the convulsions of acute nephritis are frequently associated with diminution of the œdema. Bartels has several times seen uræmic symptoms occur when rapid absorption of renal dropsy was produced by diuretics or purgatives. Andral has described coma, from cerebral œdema, and asphyxia, from pulmonary œdema, as results of the rapid absorption of cardiac dropsy and as causes of rapid death. Eichhorst has recorded less severe consequences—somnolence, delirium, myosis, facial congestion, and deep and rapid respiration, like that of diabetic coma. The experience of M. Merklen and M. Heitz agrees with that of Eichhorst. They have observed five cases, in four of which there was cardiac disease and in the fifth renal cirrhosis. All these cases are connected by the link of renal insufficiency. The patients were aged and their kidneys were therefore probably acting insufficiently. In the cases described by M. Merklen and M. Heitz the ages varied between 56 and 71 years. Atheroma of the renal arteries was present or was suspected. The symptoms are due to defective excretion of the absorbed dropsical fluid which causes visceral œdema, especially pulmonary and cerebral. The existence of this "serous apoplexy" is not a mere hypothesis. Andral found in one case the lateral ventricles so distended that on incision fluid gushed out abundantly. Even in cases of coma recovery is possible and it often coincides with the return of the dropsy. The duration of the symptoms varies from some hours to some weeks. Treatment consists in promoting elimination by the kidneys and other organs. When the symptoms are acute and connected with insufficient diuresis bleeding may be necessary; it is indicated in eclampsia and coma. When the symptoms are less severe, such as delirium or torpor, repeated local blood-letting—wet cupping of the loins and

the application of leeches to the mastoid processes—and drastic purgatives should be ordered. Fluids should be given in only very small quantities. The following is one of the cases related. A man, aged 65 years, was admitted to hospital in December, 1901. Three years previously his legs began to swell and a fortnight before admission ascites appeared. There were double pleural effusion, ascites, much œdema of the legs, and slight icterus. The urine did not contain albumin. Under treatment the œdema diminished. In April, 1902, the œdema extended to the abdominal wall and the effusions increased. The quantity of urine diminished to one litre in 24 hours and the kidneys did not excrete methylene blue administered to test their activity. From July to October paracentesis abdominis was performed thrice. On Oct. 29th the patient was somnolent and passing urine and fæces in the bed. M. Merklen and M. Heitz were surprised to find that the œdema of the legs had almost disappeared and that the ascites and pleural effusions were no longer perceptible. The liver and spleen were enlarged. On the 30th he was semi-comatose and there were general muscular rigidity, Kernig's sign, and dilated pupils. On the 31st there were deep jaundice and choluria and the coma was diminishing. With the improvement the anasarca and ascites returned and the quantity of urine increased to three litres in the 24 hours. He gradually regained his previous condition. On April 18th, 1903, he was readmitted. Until the 16th he had felt well and had gone about with his big abdomen and swollen legs. Then he suddenly became somnolent and simultaneously the swelling of the abdomen and limbs subsided. On admission he presented the symptoms found six months previously, but in a more severe form. On the 19th there were deep jaundice, vomiting, and melæna. On the 23rd he began to improve but the dropsy gradually returned. He died on May 31st. At the necropsy moderate ascites, chronic peritonitis, and atrophic cirrhosis of the liver were found. The kidneys were rather small and showed on microscopic examination chronic arteritis and subacute epithelial nephritis. There was slight left pleural effusion and the lungs were œdematous. The heart was a little dilated. There was marked effusion into the pia-arachnoid spaces.

THE WINTER'S WEATHER AT THE CONTINENTAL RESORTS.

THE following table gives a summary of the temperature and rainfall experienced at most of the principal health and pleasure resorts on the continent during the three months, December to February, of the past winter. It is permissible to speak of the winter as past in those southern latitudes, for whatever may be the case in our more northern clime spring in those favoured spots does undoubtedly commence with March. As would naturally be expected, the warmest place was Algiers, where the mean temperature was 56° F., or about equal to an average London temperature at the beginning of June. But as a drawback it will be observed that it was also the wettest. The resort with the lowest mean temperature was Florence but it was also one of the driest as regards the aggregate rainfall as well as one of the driest in the matter of days with rain. It should be said that a "day with rain" in the above table signifies a day when four-hundredths of an inch have fallen. After Algiers the places with the warmest mean temperature were Lisbon and Naples and these two cities had the advantage that their temperature was more equable than at any other spot. Lisbon's absolute maximum temperature was the lowest and its total rainfall was considerably less than that at the majority of the other stations. It had, however, with Biarritz, many more days with rain than most other places. Frost was recorded by the screened thermometer at Biarritz, Florence, Nice, and Rome. At Biarritz the thermometer descended to 32° or below on no less than 11 different nights, but at Florence the number was only six and at Nice three, while Rome had but one frost.

Stations.	Highest temperature.	Lowest temperature.	Mean daily maximum.	Mean daily minimum.	Mean of maximum and minimum.	Number of days with rain.	Total rainfall.
	Degrees F.	Degrees F.	Degrees F.	Degrees F.	Degrees F.		Inches.
Algiers ...	79	41	62	50	56·0	49	21·6
Naples ...	64	36	54	47	50·5	38	12·3
Rome ...	66	32	55	45	50·0	40	15·8
Florence ...	63	28	50	40	45·0	37	11·9
Nice	70	32	52	39	45·5	28	15·1
Biarritz ...	64	28	52	42	47·0	54	14·8
Lisbon ...	61	34	54	47	50·5	59	9·8

THE SPOROZOA IN RELATION TO DISEASE IN MAN AND ANIMALS.

Professor E. A. Minchin of the University of London delivered the first of a series of eight lectures on the sporozoa at University College, London, on Feb. 29th. During recent years the study of this important group of micro-organisms has received great attention in connexion with the etiology of such diseases as malaria, cancer, and certain tropical diseases of parasitic origin. The sporozoa, said Professor Minchin, constitute a group of protozoa widely distributed in nature and universally characterised by parasitic habits. They infest the internal organs and tissues of almost all classes of animals. There is, perhaps, no species of worm, mollusc, crustacean, insect, or vertebrate which is not liable to become the involuntary "host" of some kind of sporozoon parasite. Correlated with their wide distribution the sporozoa exhibit great diversity of anatomical characters and life-history. Yet the sporozoa as a group possess certain very characteristic features in common, peculiarities which are in direct relation with their habit of life as internal parasites. Their nutriment is always of a fluid nature—viz., the blood plasma or juices of their host, absorbed osmotically at the surface of the body of the parasite. None of the special organs for ingesting or digesting solid food, so frequent in other protozoa, are ever found in this group, while food vacuoles and contractile (excretory) vacuoles are always absent. The sporozoa are exceedingly fertile, an abundant progeny of several hundreds of motile spores (swarm spores) being formed within, and liberated from, the body of the parent. This occurs within the tissues of the host inhabited by the sporozoon. Thus the common earthworm harbours within its body a sporozoon (*monocystis agilis*) which infests the vesiculi seminales and lives (endoparasitically) within the sperm mother cells. Around the margin of these cells the spermatozoa of the earthworm develop while the parasite grows within the cell until, when it has attained full size, it is seen to be covered by a layer of spermatozoa. The growing parasite is pear-shaped and consists of a single nucleated protoplasmic body which soon issues forth from its spurious covering and leads a free life. This free parasitic stage is the "sporont" stage. Sporonts when fully grown conjugate in pairs or gametes. Each pair secretes a cyst wall within which the protoplasm and nuclei undergo segmentation into numerous small oval-shaped masses of nucleated protoplasm (zygotes). Each zygote eventually divides by repeated fission into eight smaller organisms within a single shell or covering; these are called sporozoites or falciform bodies. These zygotes undergo no further development in the body of their host the earthworm. When the latter, however, is

devoured by birds the sporozoites are set free and pass out with the fæces of the latter as individual sporozoites to be again swallowed by the earthworm within the body of which the life cycle above detailed is repeated. Some sporozoa may invade the human body and produce disease at certain stages of their life-history passed within the body of man, a subject that will be fully expounded in the succeeding lectures. The second lecture delivered by Professor Minchin on March 7th discussed the life relations of two important classes of sporozoa—the coccidia and the gregarinæ. The coccidia were, he said, minute parasitic organisms which infested the intestinal canal of worms, crustaceans, and other arthropods. They were occasionally present in echinoderms but the higher vertebrates (those above the grade of amphibians and the tunicates) were free from these parasites. Abundant spore formation by fission was a characteristic feature of these organisms, the number of spores being often so great as to produce the death of the host. This phenomenon was termed death by auto-intoxication. The spores might enter and infect a suitable host in a variety of ways—e.g., by being eaten with the food (casual infection) or by being inoculated into the host by a mosquito or other insect which served as an intermediate host (infection by inoculation). The gregarinæ were larger and more highly developed organisms than the coccidia, but their distribution as parasites included the same classes of animals as those infested by the coccidia. In a few rare cases of skin disease occurring in South America investigation has shown that the virus is a coccidium which is communicated from one person to another by contact. The sporozoa were divided into two great classes—viz., the telosporidia in which spore formation occurred only when the animal reached the adult condition (gregarinæ, coccidia, and hæmosporidia) and the neosporidia in which spore formation took place in the early stage of the life-cycle of the animal. The former class contained certain sporozoa which were pathogenic to man, including the deadly malarial parasite and others which were the probable agencies in the production of certain tropical diseases.

THE PHYSICS OF THE DAMP BED.

THE question is very commonly asked as to why it is dangerous to sleep in a damp bed. Some persons even deny that there is any risk, confidently recounting perhaps in support of their view an experience in which no harm had ensued to them, even although the mattress had been accidentally kept wet through the night by the leaking of a hot-water bottle. A consideration of the physical condition of the damp bed easily accounts for its danger to health and it does not follow that while there is risk when the coverlet is damp the risk is quite the same when the mattress is superficially wet. To begin with, damp air is not only a conductor of heat, so that the warmth of the body when surrounded by it easily escapes, but it also communicates a dampness to the coverlet which destroys its non-conductivity. The danger of sleeping in a damp bed, however, lies not so much in the dampness of the air as in the dampness of the clothes. The vital principle of the bed coverlet, as it is with all clothing, is that it should be as far as possible non-conducting—i.e., having the property of preventing the escape of the natural heat of the body. When clothing is damp it loses to a large extent this property and so the body loses its natural warmth, experiences a chill, and a serious illness may ensue. It is therefore conceivable that no harm would result if merely the mattress of a bed were wet so long as the upper coverings, the sheet, the blanket, and the coverlet, were perfectly dry, effectually preventing, that is, the escape of the body heat. A chill does not arise from the cold of dampness (cold and damp are not interchangeable terms) but from the facility with which damp air and clothes allow the natural warmth to escape. Damp clothes, in short, are good conductors of heat while dry clothes are insulators, and the degree at which the heat of the body is maintained in bed is a measure of the insulating value of its coverings. The risk of sleeping in damp clothes would be the same as if copper or tin foil were used for the purpose. It follows that the only practical and trustworthy test for a damp bed would be to place, say, a hot water bottle in it and to note how rapidly the temperature of the water falls. According to the principles just laid down the difference would be very perceptible in the case of a damp and in that of a dry or well-aired bed. The so-called damp detectors, which depend upon the stretching of a fibre or hair in dry air and its shrinking in moist air, give, in reality, no useful indication, neither does a watch glass showing the deposition of moisture.

A SANATORIUM IN THE BALANCE.

IN dealing with the subject of tuberculosis we have from time to time pointed out that unless the advocates of sanatoriums were less optimistic in their prophecies as to the benefit which is to be anticipated from these admirable institutions a reaction based upon disappointment was inevitable. Unfortunately for the true interests of the consumptives this reaction has already set in and those who have preached in and out of season that solely by sanatoriums consumption could be "stamped out" are alone to blame for this regrettable result. Sanatoriums have to some extent been promoted and built upon the implied if not specific understanding that in allowing three months' residence for each patient cure might be effected and now that the necessary interval has elapsed and the prophecy has been unfulfilled the chickens of exaggeration are returning to their roost.. Apparently the Heswall Sanatorium which was recently erected by the board of guardians of the city of Liverpool on a site overlooking the waters of the Dee has not passed altogether unscathed through the criticisms levelled against its first annual report. The results, in so far as they can be gauged from the figures furnished by our Liverpool correspondent last week, do not astonish us as we have never been led away by the "stamping out" will-o'-the-wisp. But apparently the Liverpool guardians, as well as one of the medical officers of the institution, thought otherwise. It seems that 56 patients were admitted during the year and of these seven died. This fact conveys little to us unless we know the precise stage of the disease on admission of the patients and the duration of stay in each case. If the cases were advanced or, perchance, moribund on admission the figures convey no information of any value and until we receive more detailed data we shall withhold comment. At the date of the report there were 21 patients in the sanatorium; 18 of these were reported to be improving and in three the disease was arrested. The chairman apparently regarded the report as disappointing but it was determined in order to give the institution a fair trial to keep it going for another 12 months and to endeavour to secure more cases in the primary stage of the disease. If early cases are secured we have little doubt that next year's report will be of a much more encouraging character. But it is nevertheless much to be regretted that apparently in consequence of the admission of unsuitable cases the public will receive a shock in connexion with the institution and a shock which may, we fear, prevent other boards of guardians from following the example of Liverpool. But whatever may be the facts with regard to the Heswall Sanatorium it cannot be doubted that professional opinion in this country is undergoing some change with respect to the functions of a sanatorium. With

the over-statements of the enthusiasts, of those who had but slight knowledge of epidemiological problems and of the effect upon other diseases of hospital isolation, a "stamping-out" wave passed over the country. Now, when it is shown by experience that a stay of three months is insufficient to bring about a cure there is in no small measure a change of front and an effort is being made to erect sanatoriums for the purposes of education alone. This idea is in its turn also excellent but the application of it should, it seems to us, be approached cautiously, intelligently, and economically. But in the meantime the public will perhaps ask whether they are likely to find stability even in this educational aspect of sanatoriums and we should not be altogether surprised if they asked for some more authoritative opinion than they at present possess before they agree to sanction indefinite expenditure in this direction. Would it not be well, looking at the issues at stake, if a Royal Commission or a departmental committee were appointed thoroughly to examine the question. It is, of course, easy to refer to the practice of Germany and, disregarding the fact that the circumstances of the working classes in the two countries are essentially different, to follow the German example. But before doing this it would be well to ascertain what influence the elaborate system of workmen's insurances in Germany plays in the battle against consumption. Moreover, it would be wise to learn in what manner sanatoriums could be most economically and expediously provided and if these institutions are to be used for educational purposes alone what is the length of stay proposed in each case and what are the benefits likely to accrue therefrom. Could, too, those benefits be procured in a less costly fashion by other means? There is probably no doubt in the mind of anyone at all conversant with the facts that sanatoriums, if properly administered, are excellent institutions, although tuberculosis will never be "stamped out" by them alone and in some cases equally good results may be attained outside the walls of such places. What it appears to us is wanted before the greatest use can be made of sanatoriums in a curative sense is some better machinery by which early cases of consumption may be recognised and brought under control and the Heswall incident is, perhaps, an apt illustration of that need.

THE AIR OF UNDERGROUND RAILWAYS IN ITS RELATION TO DISEASE.

IN matters appertaining to the public health it is easy to drift into hysteria and one result of such a course is to divorce level-headed public opinion, which after all is the real controlling legislative force, from sympathy with preventive medicine. But at the present time when in London at certain periods of the day men and women of all classes, who for the most part have spent or are about to spend their day in work, are huddled together in railway carriages in a fashion somewhat suggestive of cattle on the way to the shambles, any ray of light tending to show to what extent the air of underground railways and carriages becomes polluted is worthy of consideration. The latest contribution to this subject is a report by Dr. W. Scott Tebb, the public analyst of the borough of Southwark, on the condition of the air in the City and Suburban Railway, and although the air of the tube is not fairly comparable with that of the Metropolitan Railway it is not difficult to draw certain inferences from the records of the tube. The results of Dr. Tebb's investigations are in no sense contrary to expectation but notwithstanding this they are instructive and interesting. The experiments were only quite recently performed and hence they may be taken as typical of winter conditions. Each experiment was carried out in duplicate and in presence of a control in the open air and in addition to the estimation of carbonic acid and bacteria records were taken as to the temperature, humidity, and movements of the air. The average temperature on the platform was 61° F. and that of the street at the same time 49° F.; the humidity of the air on the platform was greater than that in the street. The velocity of the air on the platform varied from one mile to eight miles an hour according to the position of the moving trains. As regards micro-organisms in the street, railway platform, and railway carriage the method adopted was to expose agar plates in duplicate for half an hour, to incubate the plates at 37° C. for 22 hours, and then to count the colonies. The results are held to afford a fairly trustworthy comparison between the air of the three sources under examination and the following table based upon averages furnishes a general idea of the conditions obtaining at the period of the experiments:—

Air of—	Number of experiments.	Micro-organisms.
Street	52	459
Railway platform ...	46	114
Carriage	8	218

But the examinations made at different periods of the day and night illustrate how markedly the number of organisms in the air is governed by agencies which promote both the formation and the movement of dust and in what manner the relative quietude of the early morning both in the street and in the tube and of the afternoon in the tube influences the situation. The following table explains itself:—

Hours.	Number of micro-organisms.	
	Street.	Tube.
2 A.M. to 6 A.M.	52	54
6 A.M. to 10 A.M.	412	249
10 A.M. to 2 P.M.	455	102
2 P.M. to 6 P.M.	427	54
6 P.M. to 10 P.M.	574	111

Turning to the carbonic acid, a very similar state of affairs was found. Outside the railway stations in Southwark the carbonic acid averaged 3·8 parts per 10,000, the amounts ranging from 3·1 between 2 A.M. and 6 A.M. to 4·3 between 2 P.M. and 6 P.M. Inside the stations the amount varied from 3·5 to 9·3 the amount increasing progressively from morning to night. As a result of his investigations the author suggests that means should be adopted to reduce the carbonic acid in the tube to 6 parts per 10,000 the usual limit of permissible impurity, and he thinks that some more efficient system of ventilation should be adopted in the carriages. No one will, we imagine, wish to quarrel with these recommendations, although it may be somewhat difficult to realise them in practice. With regard to these investigations of Dr. Tebb it has, of course, to be borne in mind that carbonic acid as such is not detrimental to health even in amounts considerably in excess of the 6 parts per 10,000 referred to above. But the carbonic acid is taken as a convenient and easily determined index of the amount of organic matter in the air. Hence the risks are greatest when an excess of carbonic acid is associated with the presence of animals or human beings capable of giving rise to this indefinite organic poison of which the carbonic acid is accepted as an index. Although Dr. Tebb's investigations and conclusions relate exclusively to the tube, they suggest certain reflections as regards the carriages on the Metropolitan Railway. For instance, it would be difficult to imagine circumstances more likely to give rise to an excess of organic matter and carbonic acid than the presence of 16 or 17 persons in a metropolitan railway carriage, more

particularly when both windows and the ventilators are also closed, or when a broad-shouldered navvy or other corpulent person is blocking the window aperture. It would be of interest to estimate the carbonic acid in these circumstances between 6 and 7 P.M. in one of the Ealing trains and we might rest assured that the carbon dioxide would at least not under-estimate the amount of organic matter present. As regards the number of organisms, plates placed on the luggage rack might afford some instructive lessons; but it has to be remembered that unless there is actually coughing or loud speaking droplets are unlikely to be given off. That the overcrowding which takes place increases the risk of contracting specific disease is a self-evident proposition which is not worth discussion. If a similar overcrowding took place on the public carriages in the streets above ground the metropolitan police would soon put an end to it; the ticket collectors below ground are relatively useless except for the protection of the company. For the public their concern is small. Why not, therefore, convert the Metropolitan Railway into a "street," let the metropolitan police have access thereto, and let the cost be borne by the company? Or are we to wait until a serious railway accident by damaging or destroying the lives of those in an overcrowded train results in such heavy damages against the company that in its own monetary interest it will take the necessary steps?

THE MANAGEMENT OF THE ROYAL BERKSHIRE HOSPITAL.

THE Royal Berkshire Hospital held a special court of governors on March 1st when various proposed alterations in the rules of the institution as affecting the honorary staff and other officials of the hospital were considered. Discussion waxed rather hot and certain proposals adopted by the board of management for discussion at the special court were not carried. A committee had been appointed to inquire into the duties of the resident medical officers and had reported as follows:—

> This committee are of opinion that: 1. The resident medical staff should remain as at present constituted, but that a senior resident official shall be appointed in addition who shall by preference but not of necessity be a medical man. 2. That he shall be responsible to the house committee for the discipline of the hospital but shall not interfere with the powers of the matron as laid down in Rule 56. 3. That he shall act as secretary to the hospital. 4. That he shall act as registrar to the hospital. 5. That he shall exercise a general supervision over the daily routine work and sanitation of the hospital. 6. That his salary shall not be less than £200. The above propositions were carried unanimously with the exception of No. 4, to which Dr. Hawkins objected. Maurice Knox, Francis Hawkins, W. J. Maurice, G. E. B. Rogers, James R. Andrew Clark.

Mr. Walters moved that a clause should be added specifically stating that the new official should not interfere with the honorary acting medical staff or with the patients under their care and this clause was agreed to and incorporated in the report. After some discussion the report was finally referred to the annual court of 1905. As the matter is in abeyance for a year or so there is plenty of time for the governors of the hospital to consider what they are doing. It seems to us that if the new official is not to be a medical man to give him jurisdiction over the resident medical officers is courting disaster. A tactful lay official might not seek to interfere with the treatment of a house surgeon or a house physician, but all persons are not tactful. Moreover, we do not think it desirable that a layman should act as registrar to a hospital. For a registrar to be of any use in a hospital he must be a medical man. With regard to the point of setting an official over the resident medical staff there is much to be said on both sides. Some of the London hospitals have a permanent resident officer who is set over the house physicians and surgeons and some have not. But wherever such an official does exist he is always a medical man. Therefore we think that the governors will be well advised to insist that if the proposed official is to exercise jurisdiction over the resident medical officers he must be a medical man. Among other proposals which came before the court was one to the effect that no one should be eligible for the post of surgeon or physician to the hospital who held a dispensary, Poor-law, or club appointment; this proposal was not carried.

FOOD IN WARM CLIMATES.

IN a pamphlet published at Santa Cruz de las Palmas Dr. Sanchez Reyes of the Spanish Army Medical Service discusses the alimentary merits of *el gofio* as a food capable of sustaining human life and strength in warm climates. *El gofio* is a generic name for various products which are manufactured from different flours, including those obtained from wheat, maize, barley, white lupine, rye, chick-peas, and beans. The descendants of the gigantic Guanches are still a herculean race and yet they subsist upon this farinaceous food almost exclusively, their only extras being milk and a little coffee. Among the wealthy a few indulge occasionally in broth but meat cannot be said to be a staple ingredient in their diet. Of course, the climate of the *μακάρων νῆσοι*, or Fortunate Islands, is not one that calls for a highly nitrogenous diet, still there are many places with as high, or even a higher, temperature where the inhabitants think it necessary to consume animal food habitually. More especially is this true with regard to certain colonies which have been peopled by emigration from inclement regions. It seems certain that a diet in which meat forms the staple ingredient cannot be suitable in such cases but as years go by the *genius loci* will no doubt assert his power by gradually introducing a more vegetable regimen. Dr. Sanchez Reyes, after a somewhat elaborate examination of the chemical and physiological values of the various flours found in *el gofio*, comes to the conclusion that, associated with milk and eggs, the compound is amply sufficient for nourishment, especially in warm climates. He recommends it strongly as a ration for soldiers and in support of his contention claims the advocacy of Galen as well as the dietetic customs of the invincible Roman armies. Dr. Sanchez Reyes's pamphlet is decidedly interesting. As a writer in a late number of the *Revue des Deux-Mondes* observes: "The determination of the sources of muscular energy is ripe for discussion; it is one of the problems engaging contemporary science."

A CLASSIFICATION OF THE INSANITIES AS A BASIS FOR THE THEORY OF CRIMINAL RESPONSIBILITY.

IN a paper which is published in the *Edinburgh Medical Journal* for January Sir John Batty Tuke and Mr. Charles Howden, barrister-at-law, deal with the question of criminal responsibility in its relation to mental disorder and furnish a scheme of classification of the insanities as a basis for the further discussion of the question of responsibility in detail and with reference to each individual group of insanity. Although in theory the provinces of law and medicine are distinct great confusion between them has arisen in practice. This state of matters is due partly to the difficulties inherent in the subjects but in part also it is due to the persistence of traditional metaphysical views of insanity and to the imperfect condition of our knowledge of mental disease. The traditional views remained practically unchanged in Europe throughout the Middle Ages and up to the beginning of the nineteenth century. With few exceptions the prevalent views of insanity were "scholastic in character and indicated no real grasp of its nature, names and stock examples were repeated from one book to another," and the treatment of the insane was as marked by ignorance and superstition as its study and observation. The scientific, humane, and

rational era in the treatment of insanity followed the teachings of Pinel in the second and third decades of the nineteenth century, but the knowledge of alienists in the early half of the century did not enable them to speak with sufficient confidence as to individual cases of responsibility. Most physicians were agreed that insanity arose from morbid cerebral and bodily conditions but little was known for certain as to the constancy and character of those conditions. The prevailing psychological classification into symptomatic groups of insanity—mania, melancholia, and dementia—did much to retard the advance of knowledge and scientific investigation. "Their common characteristics were so loose and superficial that to say a case belonged to any one of them gave no further information than could be derived from superficial observation of the case itself." The gradual recognition of distinct varieties of insanity and the perfecting of our system of classification have enabled recent writers to mark out more satisfactorily the existing varieties of insanity on a combined basis of evolution of symptoms, etiology, prognosis, and pathology. Medical men have also come to recognise that organic and grave lesions of the brain may exist without mental disorder sufficient to constitute insanity, as in cases of epilepsy, alcoholism, and lead poisoning, and that in other cases of similar nature grave mental disorder may exist. Sir John Batty Tuke and Mr. Howden propound a scheme or list of the groups of insanity to be considered *seriatim* in discussing the question of responsibility in future papers. The list is given below and includes the following varieties: idiopathic or vesanic mania and melancholia; general paralysis of the insane; insanity of cerebral traumatism; insanity associated with neuroses such as epilepsy, hystero-epilepsy, and hypochondriasis; insanity of cerebral syphilis, meningitis, and sunstroke; dementia præcox, puerperal insanity, climacteric insanity, and senile insanity; paranoia; and insanity from cerebral defect such as imbecility and idiocy.

"N" RAYS IN PATHOLOGICAL CONDITIONS.

IN THE LANCET of March 5th, p. 685, Mr. A. A. Campbell Swinton, who is well known in connexion with Roentgen ray work, took occasion to call in question the views as to the occurrence of "n" rays which M. Blondlot and others have published. The criticism is welcome since it is quite possible that the enthusiasm of a discoverer has led M. Blondlot to make some erroneous deductions from the results of his experiments, but there is a steadily increasing mass of evidence in favour of the essential accuracy of the view that muscle and nerve can produce characteristic effects upon a sensitive screen in the way described in an annotation some weeks ago. A further contribution to the subject has just been made in a note by M. Gilbert Ballet, presented by M. d'Arsonval to the Académie des Sciences and entitled "De l'Émission des Rayons N dans quelques Cas Pathologiques." Having satisfied himself of the fact that the "n" rays are emitted by living muscle, M. Ballet investigated the influence exerted upon a screen, coated with calcium sulphide and fixed at the end of a tube of lead about five centimetres long, by the tissues of a number of persons suffering from various diseases involving the muscular system. In a case of primary myopathy with complete atrophy of the deltoid and partial atrophy of the muscles of the forearm the diminution of the effect produced upon the luminosity of the screen when placed near the affected muscles was directly proportional to the degree of atrophy. Cases of wasting due to toxic polyneuritis, lead palsy, and neuritis of the facial nerve, together with four cases of infantile paralysis, yielded similar results. In three cases of hemiplegia of cerebral origin in which there was contracture of the muscles these were found to emit, as tested by the screen, a larger number of the "n" rays than the corresponding healthy muscles and the same thing was observed in a patient afflicted with spastic paraplegia. The data furnished by instances of hysterical paralysis are noteworthy: in one case of monoplegia and one of hemiplegia an increased production of the "n" rays was observed. As to the significance of this last fact M. Ballet desires at present to offer no opinion; it may, however, contain the germ of important developments in regard to the nature of what are distinguished as "functional" palsies.

DANGERS OF THE TRENDELENBURG POSITION.

THE Trendelenburg position, in which the pelvis is raised, is now very extensively employed for operations on the abdomen, especially when the surgeon has to deal with the pelvis. The advantages of the position are great, for the raising of the pelvis allows the action of gravity to withdraw the intestines from the lower part of the abdominal cavity, so that the pelvic viscera become much more readily accessible. Dr. F. Jayle, however, has recently pointed out in the *Presse Médicale* that this position is not free from danger, especially if the inclination of the body is over 45°. So high a degree of inclination is not common in this country but in France it is more frequently employed. The chief dangers attributed to the Trendelenburg position are the great strain thrown on the heart and acute pulmonary congestion. The raising of the pelvis leads to a flow of blood towards the upper part of the body and thus the right heart is liable to be overfilled and a disturbance of the pulmonary circulation results, with the production of pulmonary congestion. In one case Dr. Jayle had to postpone the operation because severe dyspnœa appeared whenever the patient was placed in the Trendelenburg position. Further, if the abdominal wound is closed while the body is still inclined there is a risk of shutting up a certain amount of air in the abdominal cavity. This air may be only slowly absorbed and some is liable to escape between the layers of the anterior abdominal wall. Dr. Jayle has seen extensive surgical emphysema result from this cause and give rise to a good deal of pain. In order to avoid this emphysema he suggests that the patient should always be placed in a horizontal position before the wound is completely closed. Still another danger is pointed out. Often the patient is kept in the inclined position merely by the bent legs passing over the edge of the table; this pressure of the table is said to have led in some cases to partial paralysis of the legs. All these possible dangers should be borne in mind in employing the Trendelenburg position but its advantages far outweigh these dangers which a little care and attention to detail will do much to obviate.

RESECTION OF THE CERVICAL SYMPATHETIC GANGLION FOR GLAUCOMA.

SINCE the publication of the results obtained by Professor Jonnesco of Budapest in the treatment of glaucoma by resection of the cervical sympathetic ganglion, an account of which was given in THE LANCET[1] some years ago, much attention has been given to the prognosis and results of this form of treatment. In *American Medicine* of Jan. 20th Professor William H. Wilder of Rush Medical College gives an account of seven cases of sympathectomy for glaucoma personally investigated and discusses critically the results of all cases of glaucoma treated by resection of the sympathetic ganglion in the United States of America of which he could procure records. The results obtained by Professor Wilder himself as regards recovery do not appear to be so favourable as in the series of cases of sympathectomy published by Professor Jonnesco, but so far as they go they seem to justify

[1] THE LANCET, Sept. 30th, 1899, p. 899.

this method of treatment. The following is a summary of the clinical features and the results obtained in the seven cases referred to. Case 1. The patient was a man, aged 40 years, with chronic inflammatory glaucoma of the right eye which resulted in gradual and progressive loss of vision terminating in blindness. He was operated on in May, 1901, and the right superior cervical ganglion was removed. Contraction of the pupil immediately followed and a few hours later the tension of the eyeball was lowered. Vision improved moderately in both eyes and the tension remained low, the degree of recovery being partial though permanent. Case 2. The patient, a man, aged 62 years, had chronic inflammatory glaucoma of both eyes. Right sympathectomy was performed and marked improvement of sight followed. This improvement, however, became masked by the subsequent development of cataract in both eyes. Case 3. The patient was a man, aged 46 years, with simple (non-inflammatory) glaucoma of both eyes. Sympathectomy was performed on the left side but without benefit. Case 4. The patient, a man, aged 75 years, had simple glaucoma of the right eye and advanced glaucoma of the left eye. Right sympathectomy was performed with marked benefit as regards improvement of vision and the alleviation of symptoms. Case 5. The patient was a man, aged 76 years, with simple glaucoma of the left eye. Sympathectomy was performed and the further progress of the disease was arrested but recovery of sight did not take place. Case 6. The patient was a woman, aged 78 years, with the same affection as in the previous case, but improvement followed upon resection of the left cervical sympathetic ganglion. Case 7. The patient was a man, aged 57 years, with simple glaucoma, more marked in the right eye than the left. Sympathectomy was performed but without benefit. The general results were improvement varying from moderate to marked degree in four cases and no improvement in three cases. The excised ganglia in four cases were hardened in formalin and suitably stained to show pathological changes. In all the specimens, says Professor Wilder, there was increased pigmentation of the ganglion cells, and in two cases "mast cells" were seen. One case showed vacuolation of the nerve cells and eccentric displacement of the nucleus, but it was impossible, says Professor Wilder, to say as regards pigmentation how far the changes were normal (senile) or abnormal.

THE CHELSEA CLINICAL SOCIETY.

"INTERNAL Secretion" in Disease and in Treatment was the subject of the annual clinical debate of the Chelsea Clinical Society commenced at the Chelsea Dispensary, Manor-street, King's-road, London, S.W., on March 8th. Sir Lauder Brunton, who opened the discussion, contributed a well-balanced general view of the subject and was followed by Sir Victor Horsley who dealt with the thyroid gland. He pointed out that at the present time the general idea of the internal secretion of that gland being affected by disease was simply that it came to an end, whereas, as Sir Victor Horsley proceeded to show, the gland in the process of becoming diseased poured into the circulation in addition to its normal secretion some substances of a poisonous nature. Dr. H. D. Rolleston raised the question whether the want of success in the treatment of exophthalmic goitre and acromegaly might possibly depend on the fact that two or more glands instead of one only were in each case in an abnormal condition. Dr. A. E. Wright ended the first night of this interesting debate by discussing the problems of immunity. In our next issue we shall present our readers with a report of the proceedings.

THE HEALTH OF THE KING.

His Majesty the King has now recovered from a sharp catarrhal attack. The cold, commencing as is usual in these insidious cases with irritation in the throat and mouth, was aggravated by the exertion of his visit to Cambridge where he necessarily was submitted to many changes of temperature in his conscientious inspection of the new buildings of the University. As a result on his return from Cambridge there were some fever and bronchial irritation. His Majesty was kept in rooms of a uniform temperature and the slight pulmonary symptoms soon subsided, the patient answering quickly to remedies. His Majesty's public movements have since shown that his restoration was considered complete by Sir Francis Laking who has been in attendance.

THE annual meeting of the general council of King Edward's Hospital Fund for London was held on Tuesday last at Marlborough House, H.R.H. the Prince of Wales being in the chair. In moving the adoption of the report the Prince of Wales read a letter which he had received from a personal friend placing securities at the disposal of the Fund bringing in an income of nearly £4668 per annum if in the course of the year an increase of income from funded property amounting to £9332 in addition should be received. The figures are determined by the fact that the income of the Fund from permanent sources is £14,000 short of £50,000, this being the figure to which the generous donor wishes to raise it by contributing one-third of the deficiency. The report, which was adopted, presented many interesting features upon which we shall comment next week.

THE medical officer of health of Cape Colony reports that for the week ending Feb. 13th no case of plague in human beings occurred throughout the Colony. Plague-infected rodents were found at Port Elizabeth, East London, and Queenstown, but of 175 rats examined in the Cape Town and Harbour Board area none was affected with plague. As regards the Mauritius a telegram from the Acting Governor received at the Colonial Office on March 4th states that for the week ending March 3rd there were six cases of plague and five deaths from the disease.

THE King has sanctioned the following promotions in the Order of the Hospital of St. John of Jerusalem in England: Knights of Grace: Colonel (Honorary Surgeon-General) William Daniel Campbell Williams, C.B. (from Honorary Associate), and Dr. George Thomson (from Honorary Associate). Dr. William Allan Jamieson has been appointed Esquire of the Order.

THE Ecclesiastical Commissioners have signified their willingness to contribute a sum of £2500 towards the King's College Hospital Removal Fund. The Commissioners expect that the poorer residents upon their property in South London will benefit by the proximity of the hospital when removed.

AT the meeting of the Neurological Society of the United Kingdom, to be held at 11, Chandos-street, London, W., on Thursday next, March 17th, at 8.30 P.M., Dr. Alfred W. Campbell will read a paper on Histological Studies in Cerebral Localisation.

THE King has appointed Sir Thomas R. Fraser, M.D. Edin., LL.D., to be one of His Majesty's honorary physicians in Scotland.

A MEETING of the Epidemiological Society will take place at 11, Chandos-street, Cavendish-square, W., on Friday,

March 18th, at 8.30 P.M., when a paper on the Epidemiology of Enteric Fever and Cholera in Hamburg will be read by Dr. Reincke, medical officer of health of the city of Hamburg.

THE POLLUTION OF TIDAL ESTUARIES.

FOR some years past, and more particularly since the issue in 1896 of the Local Government Board's report upon the conditions under which oysters and other molluscs are cultivated, an increasing amount of attention has been paid to the question of the pollution of our estuaries. Although there is room for legal quibbling and academic discussion upon the point, the fact remains that in practice crude sewage can, for the most part, be discharged into tidal waters with impunity, as the Rivers Pollution Acts do not apply to tidal waters unless such waters are declared by the Local Government Board, after inquiry, to be "streams" within the meaning of these Acts. In only a very few instances have inquiries of this nature been made by the Local Government Board and in fewer still have the estuaries been declared "streams."

There is, however, another method of preventing the discharge of crude sewage into estuaries, as the corporation of Chichester recently learnt to its cost when action for an injunction to prevent it from fouling the harbour was taken successfully by Lord Gifford. As further evidence of the growing interest which is being taken in this question reference may be made to the recent very important report of the Royal Commission on Sewage Disposal which dealt exclusively with tidal waters and which we noticed at length in THE LANCET of Jan. 16th, p. 167, as also to the fact that three other reports, one of which is an official one, have also been recently issued.

We propose here to give a general outline of the nature and conclusions of these three reports, commencing with those which were first issued. The author of the first two is Mr. A. G. R. Foulerton, county medical officer of health to the East Sussex county council. One of them deals with the pollution of the tidal portion of the river Ouse in Sussex and with the relation of the enteric fever in the vicinity to such pollution, and the other is a report to the local fisheries committee of the Sussex Sea Fisheries District and relates to the pollution of the Shoreham and Chichester harbours and of the tidal Adur. As regards the Ouse, this river enters the sea at Newhaven and it is heavily polluted by the crude sewage of Lewes as well as, in a minor degree, by the sewage of other places. The incidence of enteric fever on the population of the town of Newhaven is exceptionally high and Mr. Foulerton, after a thorough consideration of the circumstances and conditions, topographically, chemically, and bacteriologically, as well as of the age distribution of the population, arrives at the conclusion that the endemicity of enteric fever in Newhaven is most probably ascribable to the polluted foreshore of the river Ouse as it traverses the borough. Such influence is, he thinks, exerted mainly through the agency of flies which, after settling upon the polluted foreshore at low water, turn their attention to milk and other foodstuffs of the Newhaven population. He thinks, too, that mussels taken from the same foreshore have, although in a minor degree, an influence in the same direction. His chief proposal is to ask that the Ouse should be declared a "stream" and that those who now contribute crude sewage to its waters should be made to purify it.

Mr. Foulerton's report upon the pollution of tidal fishing waters is a very thorough piece of work. He has carefully surveyed the harbours and estuaries in question, has taken samples of water for chemical and bacteriological examination, and has estimated, so far as the very complicated considerations involved will allow, the effect of the pollution both upon the fish and the molluscs to be found therein and upon the risk to the public of consuming such fish. We have not space to follow Mr. Foulerton in detail but we can say that he has approached the subject in a thoroughly scientific spirit and that he has held in view not only the risk to public health which may obtain from the consumption of shell-fish taken from certain points liable to pollution but he has also kept before himself the fact that a large industry is at stake and that the livelihoods of many persons are in the balance. He has, in a word, had an eye to the relative proportions of the subject. Probably much of the area covered by Mr. Foulerton's investigations may before long come beneath the jurisdiction of one of the Rivers Boards, the formation of which has been so strongly urged in both the third and fourth reports of the Royal Commission on Sewage Disposal, and the Rivers Board which secures the well-balanced advice of Mr. Foulerton will be in safe hands.

The third report to which we have referred is a voluminous and comprehensive report made to the Local Government Board of Ireland by Dr. T. J. Browne, one of its medical inspectors, and Professor E. J. McWeeney, bacteriologist to the same department. This joint report represents the results of a comprehensive inquiry into the conditions of the shell-fish layings, &c., on the Irish coast as regards their liability to contamination by sewage. To Dr. Browne was intrusted the topographical survey which was carried out much upon the same lines as those set forth in the well-known and exhaustive report made by Dr. H. T. Bulstrode to the Local Government Board of England in 1898, while to Professor McWeeney was deputed the task of examining the specimens of molluscs, water, and mud which were forwarded to him by Dr. Browne. Each observer worked independently of the other and it was only at the termination of the investigation that the results were compared. The joint report is prefaced by an able summary from the pens of Sir H. A. Robinson and Mr. T. J. Stafford of the Local Government Board of Ireland, in which they point out that the report is not to be regarded as other than a superficial examination of the foreshores in so far as they seem to be affected by sewage contamination, and, they add, with a caution bred of knowledge, that "to enable us to distinguish conclusively the layings which may be regarded as reasonably safe from those which are not far more prolonged investigations by both Dr. Browne and Professor McWeeney would be required than time and the pressure of other work has so far permitted." There is no doubt in our view that this is an eminently sound attitude. To examine each estuary thoroughly would in itself require repeated visits and a consideration of all the circumstances, perhaps, throughout a whole cycle of tides. But, this notwithstanding, both Dr. Browne and Professor McWeeney have performed in a short space of time an admirable piece of work which will furnish a sound foundation upon which they and other observers may work in future. Dr. Browne's portion of the report is illustrated by numerous maps, showing by different colours and signs the areas devoted to shell-fish (oysters, mussels, cockles, and periwinkles) culture, growth, and storage, as well as the positions of the sewer and drain outfalls. As a result of his survey Dr. Browne has made a sort of provisional classification of the beds, layings, &c., into (1) those which are apparently *free* from pollution; (2) those the purity of which must be regarded as *doubtful*; and (3) those which appear undoubtedly to be *contaminated*. This classification will prove useful for the application, cautiously, of any administrative measures which may be enacted as a consequence of the recommendations of the Royal Commission on Sewage Disposal. In this connexion it is important to note that Dr. Browne's report shows that there is a very material interchange of shell-fish between England and Ireland, and that, hence, any administrative measures to be of the greatest utility must apply to all parts of the British Isles.

Professor McWeeney in his preliminary remarks sets out fully and in interesting fashion the precise steps which he took to ascertain the presence or absence of organisms which he regards as being indicative of pollution by sewage, and we read with interest that although he attaches very considerable importance to the presence of typical bacillus coli communis he attaches but little value to the presence of the bacillus enteritidis sporogenes. He says, in fact, "I very much doubt the significance of the presence of B. enteritidis." This is an instructive and interesting fact having regard to the very great importance which Dr. E. Klein apparently attributes to the presence of this organism. Professor McWeeney inclines to the view that contamination may be gauged not by the mere presence of the bacillus coli but by the degree of concentration of that bacillus and his standard has apparently been the presence or absence of what he regards as typical bacillus coli in one cubic centimetre of oyster fluid or of water. But with characteristic honesty and frankness and with true scientific insight he proceeds to question his standard by stating that before the problem as to whether that standard is a fair one or not can be decided it is necessary to ascertain (*a*) whether oysters, &c., which do not contain the colon bacillus in one cubic centimetre can be shown to contain it in their entire organism; (*b*) whether the

colon bacillus is ever demonstrable in small quantities (one, ten, or 100 cubic centimetres) of sea water taken far from the shore and therefore absolutely free from all possibility of contamination with sewage; and (*c*) whether there exist in the sea water of oyster beds sources of bacillus coli (*sensu stricto*) other than sewage. Here Professor McWeeney refers "to the possibility that the intestinal contents of the sea-fowl and fish may contain that organism and under certain circumstances liberate it into the water in quantities large enough to perceptibly affect its bacteriological character." These are the very points the importance of the solution of which was urged upon the Royal Commission on Sewage Disposal by Dr. Bulstrode and Dr. J. C. Thresh, and apparently the researches of Dr. A. C. Houston have enabled him to answer (*a*) in the affirmative. We must, however, await the issue of his full report before we are in a position to speak positively with regard to (*b*) and (*c*). But with reference to (*c*) we may call attention to a communication in THE LANCET of March 5th, p. 648, by Dr. J. W. H. Eyre on the Distribution of Bacillus Coli in Nature, in which he states that he has for some years past examined from time to time for bacillus coli the fæces obtained from various animals and, omitting land animals, it may be pointed out that Dr. Eyre found what he regards as typical bacilli coli in the intestinal contents of the duck, the pigeon, and the sparrow. He has also examined freshly killed sea birds, procured for him through the kindness of Dr. Bulstrode, and has isolated therefrom specimens of the bacillus coli. Fish, too, caught two miles from land in four fathoms of water at flood tide and examined for the bacillus coli were found to yield the organism in every case. Dr. Eyre does not attach undue importance to these preliminary investigations but they suggest, as he observes, the desirability, indeed, we would add, the necessity, on the grounds of common justice to the public and to the oyster merchant, of clearing up this point.

But to revert briefly to Professor McWeeney's admirable report it has to be said that generally speaking his findings agreed with those of Dr. Browne. There were, however, some notable exceptions. In one of these the bacteriologist was able to correct the epidemiologist; in another the bacteriologist failed in the first instance to discover bacillus coli in oysters obtained from a source admitted presumably by the epidemiologist and bacteriologist alike to be obviously liable to pollution by sewage. It is, however, clear from this very important piece of work that the view expressed in the last report of the Royal Commission on Sewage Disposal as to the value of bacteriological examinations was a thoroughly sound one and in arriving at its conclusions the Commission doubtless had before it the full report of Dr. Houston, the publication of which is anxiously awaited by all epidemiologists and bacteriologists. It appears to us that the report of the Commission is exerting a wholesome effect upon the unscientific use and application of experimental work which has not yet reached such a phase of stability as to justify its application to administrative measures, and all those familiar with the real merits of the problem will, we feel sure, agree with Sir H. A. Robinson and Mr. Stafford when they say, while according every possible credit to the excellent work of Professor McWeeney, "at the same time we think it right to state that in our opinion bacterioscopic or chemical examinations of samples taken from shell-fish layings cannot be regarded as a substitute for careful and intelligent local inspection, but rather as an aid in all but obvious cases of pollution." The precise value of such aid must, we take it, depend very largely upon the answer to be given to the three provisional conditions which have been set out by Professor McWeeney and to which we have already referred.

MEDICINE AND THE LAW.

The Legal Claim for Medical and Surgical Fees

THE conditions under which an action may be brought to recover fees earned by medical men are sometimes imperfectly understood as is shown by letters written from time to time to THE LANCET with regard to them. The law on the subject is contained in the following sections of the Medical Acts, 1858 and 1886. The Act of 1858 provided for registration and also that no one should recover fees for medical or surgical attendance or for any operation unless he proved at the trial that he was duly registered. Section 31 of this Act was, and for medical men registered before June 1st, 1887, may be said still to be, as follows:—

> Every person registered under this Act shall be entitled according to his qualification or qualifications to practise medicine or surgery, or medicine and surgery, as the case may be, in any part of Her Majesty's dominions, and to demand and recover in any court of law, with full costs of suit, reasonable charges for professional aid, advice, and visits, and the cost of any medicines or other medical or surgical appliances rendered or supplied by him to his patients: Provided always that it shall be lawful for any College of Physicians to pass a by-law to the effect that no one of their Fellows or Members shall be entitled to sue in manner aforesaid in any court of law, and, thereupon, such by-law may be pleaded in bar to any action for the purposes aforesaid commenced by any Fellow or Member of such College.

It will be observed that this authorised registered medical practitioners to practise and to recover fees according to their qualifications only, and that it permitted and contemplated the possibility of a College of Physicians prohibiting not only its Fellows but its Members, a term which would possibly cover its Licentiates, from suing in courts of law for payment. The possibility of such a regulation as to Members being passed was not unlikely to deter young men from seeking the qualification to be conferred by a College of Physicians and, in fact, it is believed to have had the effect of increasing the number of candidates for the qualification of L.S.A. The Medical Act, 1886, provided for a qualifying examination in medicine, surgery, and midwifery for all persons to be registered thereafter under the Medical Acts. Having done so it defined the scope of their practice in these terms:—

> Section 6. On and after the appointed day[1] a registered medical practitioner shall, save as in this Act mentioned, be entitled to practise medicine, surgery, and midwifery in the United Kingdom and (subject to any local law) in any other part of Her Majesty's dominions and to recover in due course of law in respect of such practice any expenses, charges in respect of medicaments or other appliances, or any fees to which he may be entitled, unless he is a Fellow of a College of Physicians the Fellows of which are prohibited by by-law from recovering at law their expenses, charges, or fees, in which case any such prohibitory by-law, so long as it is in force, may be pleaded in bar of any legal proceeding instituted by such Fellow for the recovery of expenses, charges, or fees.

This it will be observed entitles all registered medical practitioners, subject to exceptions which are specified in other parts of the Act, to practise medicine, surgery, and midwifery and to recover accordingly. The section, moreover, recognises the restrictive powers of Colleges of Physicians only in respect of their Fellows. With regard to the question recently raised of prohibiting medical men from dispensing, it may be noticed that both the sections quoted recognise the right of the medical practitioner to charge for medicines subject in Section 31 of the Act of 1858 to his qualification. Under that section a surgeon could only charge for medicines when he provided them in a surgical case as subordinate adjuncts to surgical treatment. With regard to the limited application of Section 6 of the Medical Act of 1886, Section 24 of the same Act provides that:—

> This Act shall not increase or diminish the privileges in respect of his practice of any person who on the day preceding the appointed day[2] is a registered medical practitioner and such person shall be entitled on and after the said appointed day to practise in pursuance of the qualification possessed by him before the said appointed day in medicine, surgery, and midwifery, or any of them, or any branch of medicine or surgery, according as he was entitled to practise the same before the said appointed day, but not further or otherwise.

Section 28 of the same Act repeals certain Acts of Parliament then in force or parts of them, including Section 31 of the Medical Act of 1858 quoted above, but with reference to this section provides also that such repeal "shall not affect anything done or suffered, or any right or title acquired or accrued, before such repeal takes effect, or any remedy, penalty, or proceeding in respect thereof." The net result of these enactments is that the medical man registered before June, 1887, has to consider the nature of his qualifications appearing in the Register and the nature of the services which he has rendered before bringing an action to recover fees. The medical man registered after June, 1887, is independent of all such conditions. Only if he is a Fellow of a College of Physicians which does not permit its Fellows to sue must he treat the reward of his work as a "honorarium."

[1] June 1st, 1887 (or such other day in June, 1887, as the Privy Council might appoint), Section 27.
[2] Ibid.

SANITATION IN THE BAKEHOUSE AND THE RESTAURANT KITCHEN.

IT was at the end of 1889 and the beginning of 1890 that we published a series of reports on "Bakeries and Bread-making." We first described the dangerous filth existing in underground bakeries not only in poor quarters but notably in the establishments of some fashionable London West-end confectioners and bakers. Then we alluded to the unhealthy nature of the work imposed on the journeymen bakers, the night work, the long hours, and the diseases prevalent among this section of the population. These details were followed by a description of the bakery in the Rue Scipion which provides all the bread consumed in the hospitals and which belongs to the Paris Municipality. Here there are no night work, no excessive work, good pay, and old age pensions. The bread is pure and cheap and it does not entail any expense on the ratepayer but, on the contrary, saves the public purse by providing the hospitals with wholesome food at something like cost price. We also gave an account of the coöperative bakeries of Vooruit, of Ghent, and of the Maison du Peuple of Brussels where model conditions prevail in regard to cheapness, purity, and sanitary surroundings in the making of the bread. There journeymen bakers have the eight hours day, no night work, plenty of light and ventilation, and better pay than in the ordinary bakehouses, and there is consequently much less sickness. This information gradually filtered through from our columns to the trade papers and the general press. It ultimately found an echo in proposals and speeches made in the House of Commons and the greater rigour shown in dealing with underground bakeries under the Factory and Workshop Act of 1901. Then the Factory Act of 1895 was passed forbidding the using of a "place underground" as a bakehouse unless it was so used before the passing of the Act and numerous by-laws have been issued by local authorities rendering the supervision of such places more and more severe. So there has been some improvement and the publicity which we gave to the subject has helped to bring this about.

After dealing with bread-making we published an article on Sanitation in the Kitchen,[1] in which we described the regulations issued by the Paris Municipality in regard to the restaurant kitchens. We also related how Dr. Regeard had taken action on behalf of the professional cooks. The great prevalence of disease among them is the direct consequence of the unwholesome conditions under which they work and this was denounced by Dr. Regeard. Now to-day we find that Dr. W. Collingridge, as medical officer of health of the City of London, has issued a special report coupled with important and practical proposals in regard to the restaurant kitchens and the bakehouses of the City. The suggestion is that such establishments should have certificates given to them if their premises are in a satisfactory state. There is nothing new in the proposal. Silver is "hall-marked" and in many seaside places or other health resorts certificates are given to lodging-house keepers as to the condition of their drains, &c. Many owners of restaurants in the City have been called upon to carry out alterations and repairs and they feel that they should reap some benefit from such outlay. If they could exhibit a certificate it might attract customers. To the public, also, it would be a great advantage to know that the kitchens where the food which they eat is cooked have been examined by experts and put in order. Dr. Collingridge proposes that all the owners of kitchens and above-ground bakehouses should be told what are the requirements that would meet the necessities of the case and that if they complied with the specifications prepared by the corporation a sanitary certificate would be granted. But this is evidently not sufficient, for a place that is in a perfect state to-day may soon degenerate and become unwholesome. The inspections should be repeated from time to time and fresh certificates should be issued. It is thought that under this system the restaurant keepers and the bakers would be much more willing to carry out the requirements of the sanitary authorities and would devote more time and attention to the proper maintenance of the necessary standard of sanitary perfection. A somewhat similar way of proceeding has worked well in regard to houses let out as cheap tenements. These are exempted from the payment of inhabited house duty if the medical officer of health certifies that the tenements are kept up to the model sanitary standard established.

The sanitary requirements of tenements are, however, better known than those of bakehouses or restaurant kitchens. It will be, therefore, of practical interest to see what are the rules it is proposed to apply to the City bakehouses and restaurants. Now, in this respect, the first object is to scour and thoroughly to wash out the place. Therefore the walls and ceiling should be finished off with a hard, smooth surface made of impervious material so that it can be washed. The floor, for the same reason, should not be absolutely level but should slant slightly so that the water may easily drain away. The method suggested for dealing with damp walls is somewhat stringent. Another inner wall is to be built at least half a brick thick and separated from the damp wall by an open space also at least half a brick wide. This space is to be ventilated and drained. But such a supplementary wall would make the interior of the bakehouse smaller and the cost of space in the City will cause many to seek some other method of curing the dampness of their walls. This is the more likely as after all the remedy only masks the evil and does not in any way remove it. Of course, there are the usual stipulations as to the perfect soundness of drain-pipes and the various sanitary fittings. The bakehouses are to have a minimum height of eight feet and at least 1500 cubic feet of clear space between the ovens and any stored flour. For each person employed in the bakehouse there must be at least 400 cubic feet. As far as possible natural light should be used and when artificial illumination is necessary it should be either by electricity or by incandescent burners. Then we are told that the ventilation should insure a constant and sufficient change of air without producing draughts. It would be very interesting to know how this can be provided, for unless mechanical means are employed with very elaborate methods of delivery and extraction of the air either the ventilation is insufficient or a draught is created. Nevertheless, we are told that the temperature must not exceed 80° F. except during the half hour after a batch of bread has been taken out of the oven. It will be more easy to ventilate, as proposed, the ovens themselves, so that the heat, steam, and sulphurous gases shall be conveyed straight to the open air instead of permeating the bakehouse, much to the injury of those employed there. Then the flour should not be stored in the bakehouse. There should be ample lavatory accommodation, but outside and well away from the bakehouse. If there are cisterns for the storage of water they should be fitted with dust-tight covers. Flour should not be put on the ground but on shelves at least 12 inches from the ground. All the dough troughs and heavy articles should stand on castors, so that they can be easily removed when the walls and floor are sluiced with the hose and jet which should be at hand. Shelves must stand out two inches from the wall and all unnecessary woodwork must be taken away.

In regard to the restaurant kitchens the same regulations apply as to the facilities for washing the floor and walls, for ventilating, for lavatories away from the kitchen, for draining, for the prevention of damp walls, for the removal of unnecessary woodwork, and so on. The minimum height of a kitchen should be eight feet and the capacity equal to 400 cubic feet for every person employed therein, and no kitchen must have less than a capacity of 1500 cubic feet. Where the kitchen is underground the inlets for ventilation must be at least 12 inches above the footway or the ground abutting upon the kitchen. Further, it is stated that when gas is used in the process of cooking means must be provided for carrying off the fumes generated and hoods must be placed over all stoves and ranges to carry off the fumes and heat. Such hoods, of course, must communicate with the outer air by means of a shaft or flue. Naturally, also, the storage of food and all the scullery work, draining of plates, the shelves, &c., for saucepans and other utensils, should be provided for outside the kitchen. If this is not possible there should be a dwarf partition to separate the scullery work from the cooking. Then there must be proper bins for flour and other articles of food so placed as not to be exposed to dirt, dust, or moisture. Enamelled stoneware sinks should be provided, especially for the washing of vegetables. The metal bins for the reception of refuse must have tightly fitting covers and must be emptied every day. Great care should be taken to provide

[1] THE LANCET, April 26th, 1890, p. 934.

separately for each sex, near but outside the kitchen, wash-hand basins for personal ablutions. The kitchen wearing apparel should be hung up outside the kitchen and, in a word, every facility ought to be provided for maintaining the perfect cleanliness of both the kitchen and the cooks.

These regulations, it will be seen, evidently contemplate the continued existence of underground kitchens. For the City, considering how the houses have been built, the immense value of the land, and the extreme cost of any radical alteration, it is presumably necessary to make the best of the evil conditions that prevail. Undoubtedly the late Sir B. W. Richardson was right when he urged that it was a fundamental mistake to place the kitchens in the basement of houses; the kitchens should be in the garrets rather than in the cellars. The picture given by the above regulations of air inlets 12 inches above the footway is not encouraging. In times of epidemic it has been noticed, especially in regard to cholera, that there was a greater number of cases among those who were regularly employed in the cleaning of boots. The boots worn by pedestrians are certainly more likely to come in contact with dejecta and to become the carriers of specific germs. That is why Mahomed, who was an eminent sanitary reformer, would not allow the faithful to enter houses of prayer with their boots on. In eastern countries it is the practice to leave the shoes or boots at the door when a call is made. As a compromise in regard to this custom, Europeans in Constantinople generally wear goloshes which they take off at the door when they make a call. Here, however, we have the crowded streets of the City where thousands of feet pass and repass, ever stirring the dust of the pavement, and within 12 inches of all these boots and feet and of this dust are the intakes of air for the ventilation of the kitchens. This dust-laden air will pass over the dishes and the saucepans and sprinkle them with the heavier particles of every sort of dirt brought in from the City causeways. This street dust will then be duly eaten by the frequenters of the restaurants. If it is impossible, really impossible, to abolish the underground kitchens then the air intakes that are on the level of the street should be provided with some method of filtering or of washing the air brought in. Otherwise these air intakes should consist of shafts that would bring the air down from above the roof of the building. It is difficult to justify the giving of a certificate for sanitary excellence to a kitchen which is ventilated with the air and dust collected within a few inches of the pavement of a city street.

In Paris the suspicions which it is so natural to entertain in regard to the restaurant kitchen have been met by many restaurant proprietors in a very radical and effective manner. The celebrated Duval restaurants made their reputation by simply placing the kitchen in the restaurant itself. Just as in England the customer may watch his steak on the silver grill, so can the much more elaborate cooking of the Duval chefs be observed by the intending diner. Indeed, a large proportion of the cooking in Paris restaurants is done in the presence of the customers. It has often been a matter of surprise that there are no imitations of the Duval restaurants in this country. English people, who know little about the culinary arts, apologise for the simplicity of their food by saying that they like to know what they are eating. At the Duval restaurants they can see what they wish to eat being cooked and the fact that the customer can watch the cook is a very effective guarantee for the cleanliness of the cooking.

In any case it is very urgent that all these problems should be taken in hand and that practical action should be attempted. Dr. Collingridge therefore is to be congratulated upon his initiative. As the difficulty of obtaining the services of domestic servants grows greater and as the number of persons living in flats and chambers increases the tendency will be to reduce housekeeping to its simplest expression. For this purpose dining at the restaurant may ultimately become as much the custom in London as it is in Paris. Consequently the importance of establishing an effective control over the sanitary condition of restaurant kitchens becomes a matter of growing concern and we are therefore glad to record the measures which the City Corporation is now contemplating. Their successful application will meet with general approval and will constitute a useful example for other local authorities.

Looking Back.

FROM

THE LANCET, *SATURDAY*, March 11, 1826.

ST. BARTHOLOMEW'S HOSPITAL.

Exceedingly rare case of Intussusception, wherein upwards of a yard of intestine was removed.

In every case of intussusception that has hitherto been published in the Journals, there has always been some questionable part, some deficiency of description connected with it, so as to leave a doubt whether the portion of substance brought away was really intestine or a tube of lymph, secreted from the internal surface of the intestines; and this very circumstance has led some medical men to become so sceptical as to question whether such an occurrence, as that of a loss of a portion of gut, ever happened. It is, therefore, with no little gratification that we have it in our power to remove any existing scepticism on such an interesting and fortunately rare disease, by reporting the following case:

A woman about the middle period of life, had been for some time labouring under a constipation of the bowels, and she in consequence sent for her medical attendant, who on the second day of his visiting her, had his attention directed to a slight protrusion which had taken place *per anum*. From the appearance which it presented on a superficial examination, he was induced to think it was a portion of the rectum, and as no particular swelling of the parts had as yet supervened, the tumour was readily returned.

The constipation, however, continued, and within a day or two she was seized with severe symptoms of peritoneal inflammation; there was pain over the abdomen, accompanied with a continual state of nausea and sickness, so that every kind of nourishment that was taken was instantly rejected. Just about this time a protrusion again recurred, and to a greater extent than at the former period; this induced the surgeon more minutely to examine the condition of the parts, for which purpose he very gently withdrew a small portion, and finding it yield very readily, he continued in this manner gradually withdrawing the gut, until *one yard and three inches of intestine* were brought away, and when the last portion was removed, no additional force was employed. The violent and distressing symptoms which had previously harrassed and tormented the patient, now, in great measure, subsided; still, however, pain was complained of in the abdominal region, and there was an occasional recurrence of nausea and sickness. A dose of castor oil was given the patient by the attendant surgeon, and to his great surprize he had the satisfaction to find on visiting her the next day that the bowels had acted for the first time since the commencement of the attack. On examining the evacuation it was found to present the appearance of a healthy and natural secretion. Small doses of sulphate of magnesia in mint water, were occasionally administered, and in a very short time the nausea and sickness subsided. The patient went on progressively improving to the eighth day, at which time the bowels had acted three or four times, and the general state of the patient was such as to induce a favourable prognosis of the case to be given.

To use the metaphorical language of John Hunter, however, "Nature took the alarm, conscious of her inability to sustain the extensive injury that had taken place, she gave up the contest;" and at the moment when the patient appeared to be going on favourably, life ceased.

Mr. Stanley assisted in examining the body, which we need not say was done in a most careful manner. It was found that the detached intestine was a portion of the ileum which had become intussuscepted (if we might be allowed to use such an expression) within the colon, violent straining attendant on the distressing symptoms under which the patient laboured, had in all probability greatly facilitated the descent of the gut. And that it did not arise from the force which was used in extracting it is abundantly proved, from the circumstance that the solution of continuity was discoverable. An inflammatory action had taken place about the caput coli, which had occasioned a secretion of lymph, thus completely agglutinating the two portions of intestine together; and from this agglutinated part had the

separated portion of intestine been detached. The ileo-colic valve was entire. The mucous coat of the transverse arch of the colon was found to be in an inflamed state, and in two or three places small ulcerated spots were discoverable. The peritoneum was also inflamed, but not in a very remarkable degree.

The portion of gut which had been removed, was brought to the museum by Mr. Stanley, who showed it to the pupils the following Saturday. There can be no doubt as to its being intestine, since the valvulæ conniventes were very apparent, and moreover the coats of the intestine were divided, and shown. The valvulæ conniventes, as is usual, were found to be more numerous towards that portion which was nearer the jejunum.

Mr. Langstaff and Mr. Welbank, with several other respectable surgeons, and we believe Dr. Latham also, have seen the preparation, and it is unnecessary to say they are all thoroughly convinced of the fact of its being a portion of gut.

SMOKE PREVENTION AT GAS WORKS.

(A NEW PROCESS OF GAS MAKING.)

AN invention has recently been brought to our notice for carbonising coal for the production of gas which promises to do away with the smoke nuisance at gas works. The inventor, Mr. T. Settle of Exeter, has been conducting investigations in this direction for a considerable time and has at last been successful in producing a form of retort in which the carbonisation of coal can be carried out at a regulated temperature and under more scientifically correct conditions than have been possible before. In the ordinary method of carbonising coal the plan has been to use horizontal retorts usually charged by hand, and while it has always been known that by working in this way the results obtained were much inferior to those which ought to be possible in theory the method has held its own for general practical utility.

Probably everyone who has visited a gas works at charging time has noticed the waste of gas and the volumes of thick black smoke which escape when the fresh charge is introduced. This seems to be unavoidable when working by the old process and though very many attempts have been made from time to time to curtail the loss and to do away with the escape of smoke and crude gas the process remains to day much the same as it was in the earliest days of gas manufacture.

In the ordinary process of gas making after the charge of coal has been carbonised the retort door is opened and the coke is "drawn" by hand with long rakes. This is an exceedingly exhausting process to the stokers and is at the same time a cause of nuisance because, while the red-hot coke is being drawn out, tar drips down from the "ascension pipe" on to the red-hot coke and produces a thick smoke with an abundance of soot. After the coke has been "drawn" the stokers proceed to charge the retort by shovelling in coal, or in some works the charge is introduced more rapidly by means of a scoop operated either by mechanical power or by hand. In either case there is a certain unavoidable escape of gas and the retort is considerably cooled by the introduction of a large body of coal. At low temperatures there is a considerable formation of tar which has at the present time very little commercial value, whereas more gas and less tar are produced when the temperature rises. In the new process the temperature is kept constant throughout and what little tar is made can at will either be obtained as such or can be returned to the retort and completely gasified. The laborious "drawing" by hand is greatly simplified, as the retort is vertical and the coke falls out with very little manual labour. The charging is most ingeniously and simply carried out without any manual labour at all. The coal, in a state of fairly fine division (being what is generally known as "slack"), is placed in a hopper above the retort and is allowed to drop into it when required. Working in this way the temperature of the retort is not much affected by the small quantities of coal introduced and can be kept at the heat which is best for the production of gas and not being exposed to great changes of temperature the retort is less liable to crack.

As the result of a very large number of experiments by different observers it has been found that the saving of the gas ordinarily lost in the old method of charging and the gain owing to the temperature being maintained at the most favourable point throughout result in an increased yield of gas of no less than 30 per cent. above that obtained by the old method. This is, of course, a very considerable saving but there is another which from a financial point of view may be even more important and that is that the new process enables "slack" or small coal to be used profitably for gas making. This is a very great achievement, as up to the present it has not been found practicable to obtain such good results with "slack" as with larger coal. There have been a good many attempts in times past to get an increased yield of gas from coal and some of them were successful from this point of view but failed in some other important point, either through the apparatus being complicated or through the coke produced being soft and unsaleable. The coke produced by the new process is in every respect equal to the best coke obtained from horizontal retorts and the yield of ammonia, which is a by-product of some importance, is equal to that obtained by the old method.

In the new process there is absolutely no escape of gas during the charging or "drawing" and hence the process will be of particular value to works situated in or near populous districts.

ASYLUM REPORTS.

London County Asylum, Claybury (Report for the year ending March 31st, 1903).—The average number of patients resident during the year was 2398, comprising 996 males and 1402 females. The admissions during the year amounted to 445—viz., 180 males and 265 females. Of these, 373 were first admissions. Dr. Robert Jones, the medical superintendent, states in his report that a higher proportion of senile cases was admitted than during the previous year and that the proportion of cases of general paralysis among the admissions was unusually high—viz., 22 per cent. 28 per cent. of the admissions had a hereditary history of insanity, while alcohol was the cause of insanity in 27 per cent. Influenza appeared also to be a "more potent but subtle factor in the etiology of insanity than is usually recognised. Especially was this the case when the attack of influenza had been a mild one." The number of patients discharged as recovered during the year amounted to 157—viz., 60 males and 97 females, or 6·5 per cent. of the average number resident. The deaths during the year amounted to 223, or 9·3 per cent. as calculated on the same basis. Of the deaths, six were due to epilepsy, seven each to renal disease and bronchitis, 18 to dysentery, 21 to cardiac disease, 26 to epilepsy, 29 to senile decay, 29 to pneumonia and broncho-pneumonia, 38 to pulmonary and other forms of tuberculosis, 39 to general paralysis of the insane, and the rest to other causes. "More senile cases," says Dr. Jones, "died this year than in any year since the opening of the asylum ten years ago." Asylum dysentery attacked 26 males and 56 females and was the direct cause of death in 18 cases. "I consider overcrowding to be," adds Dr. Jones, "one of the most potent of the causes of asylum dysentery. ..... All cases of diarrhœa not yielding to treatment in three days are now segregated in a special isolation hospital." Two female patients admitted while pregnant gave birth to infants; one has since been discharged but the state of the other is unfavourable in regard to cure. The Commissioners in Lunacy observe in their report that the asylum was in excellent order throughout, that the wards were well lighted and cheerful, that the dormitories and bedding were in a thoroughly satisfactory condition, that the patients were neat and tidy in appearance, and that the medical case-books were carefully and intelligently kept. The committee of management states in its report that the work of testing and repairing the drains of the asylum has been completed, that the Claybury Hall or building for private patients has been connected with the fire-alarm system of the main building, and that additional fire-hydrants have been fixed to give better protection in case of fire. The farm accounts show a profit on the year's working of £94 10*s*. The sum of £7883 has been spent during the year in repairs, additions, and alterations.

London County Asylum, Colney Hatch (Report for the year ending March 31st, 1903).—The average number of patients resident during the year was 2490, comprising 916 males and 1574 females. The admissions during the year amounted to 477—viz., 186 males and 291 females. Of these

391 were first admissions. Dr. W. J. Seward, the medical superintendent, states in his report that among the cases admitted were 19 epileptics, 259 general paralytics, and 23 patients over 70 years of age. "Among the admissions were 55 aliens, of whom 47 were Jews. The number of Jewish patients at present in the asylum is 259, which is an increase of 15 on the number for the previous year." Of the causes of insanity in the admissions hereditary predisposition was found in 23 per cent. of cases, 13 per cent. (among the males 20 per cent.) were due to alcoholic intemperance, and 14 per cent. of cases were due to anxiety, overwork, and mental strain. The number of patients discharged as recovered during the year amounted to 178—viz., 58 males and 120 females, or 7·1 per cent. of the average number resident. The deaths during the year amounted to 238, or 9·5 per cent. as calculated on the same basis. Of the deaths five were due to renal disease, 19 to bronchitis, 25 to colitis, 25 to cardiac disease, 30 to senile decay, 34 to general paralysis of the insane, 40 to pulmonary and other forms of tuberculosis, and the rest to other causes. Post-mortem examinations were made in 186 cases. Referring to the late disastrous fire at the asylum Dr. Seward adds: "A very large number of both the male and female members of the staff took part in the work of rescue and I cannot speak too highly of the discipline and devotion to duty which was shown by them under such a trying ordeal. Several narrowly escaped with their lives from the suffocating effects of the smoke which rendered the work of rescue very difficult. I am deeply thankful to be able to feel assured that all the patients who lost their lives were insensible, if not dead, from suffocation long before the flames reached them. In this connexion it may be mentioned that of the 269 patients who were rescued only one sustained any severe burns." A small isolation hospital which provides accommodation for six patients is completed. The asylum was free from enteric fever for more than a year but five cases occurred during the year and one sufferer (a nurse) succumbed to the disease. The committee of management states in its report that a new pump and fire main are now completed at a cost of £845, that extra exits for use in case of fire have been provided at the female staff quarters at a cost of £120, that the drains at the farm buildings have been relaid and brought up to date, that the sum of £10,059 has been spent on additions, alterations, improvements, and repairs, and that the farm account shows a working profit on the year of £414.

London County Asylum, Hanwell (Report for the year ending March 31st, 1903).—The average number of patients resident during the year was 2554, comprising 998 males and 1556 females. The admissions during the year amounted to 497—viz., 235 males and 262 females. Of these, 411 were first admissions. Dr. R. R. Alexander, the medical superintendent, states in his report that cases of melancholia of both sexes greatly outnumbered those of mania among the admissions and that this has been the case for many years past. Hereditary perdisposition to insanity was found in 16 per cent. of the males and 12 per cent. of the females admitted, while alcoholic intemperance was found to be the cause of insanity in 16 per cent. of males and 20 per cent. of females. The smallness of these percentages, adds Dr. Alexander, is due to the infrequency of visits from friends of patients owing to the prevalence of small-pox in the institution for a considerable time, so that information as to these causes was not forthcoming. The number of patients discharged as recovered during the year amounted to 173—viz., 80 males and 93 females, or 6·8 per cent. of the average number resident. The deaths during the year amounted to 222, or 8·8 per cent. as calculated on the same basis. Of the deaths three were due to renal disease, eight to colitis, 14 to bronchitis, 16 to cardiac disease, 20 to senile decay, 28 to pulmonary and other forms of tuberculosis, 62 to general paralysis of the insane, and the rest to other causes. Post-mortem examinations were made in 210 cases. There was no suicide, serious casualty, or inquest during the year. The Commissioners in Lunacy state in their report that the asylum continues to be maintained in very good order, that the wards, dormitories, and bedding were in a very satisfactory condition, and that the medical case-books and post-mortem records were well and carefully kept. Having regard to the recent lamentable loss of life by fire at Colney Hatch Asylum the Commissioners in Lunacy devoted considerable attention to the question of the safety of the nurses and patients residing in the temporary buildings in case of fire. Many recommendations were made which the committee of management is now engaged in carrying out. The committee of management states in its report that the sum of £6219 has been spent in additions, alterations, improvements, and repairs, that many alterations have been, and are being, carried out to provide additional exits from the building in cases of fire, that a second professional fireman has been appointed who is resident at the asylum, so that a trained fireman is always on duty, and that the installation for incandescent gas-lighting for which an expenditure of £550 had been sanctioned was now practically completed with satisfactory results.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Borough of Kingston-upon-Thames.—Mr. H. Beale Collins thinks that the coming into operation of the new Education Act is the most important event to be recorded in connexion with the public health and if the powers bestowed upon county and borough councils are administered with a due regard to the principles of preventive medicine we entirely agree. The first recommendation made to the town council of the borough is that the number of desks or places in the present schools should be reduced from 3138 to 2466, advice which we hope to see followed. Mr. Collins is clearly alive to the importance of physical training in the schools and he suggests that in addition to exercises on the Swedish system the Swedes should also be followed in the matter of the medical examination, weighing, and measuring of the children. He further advises that an assistant school attendance officer with the certificate of a sanitary inspector should be appointed. Certainly this step would be likely to insure the control of the council over infectious diseases, more especially in the case of diseases such as measles and whooping-cough, where a medical man is either not called in at all or only in the later phases of the illness. Mr. Collins thinks that the great safeguard against contracting tuberculosis is to render the body resistant to the germ by physical training, by an open-air life, and by rational food.

Chelmsford Rural District.—Dr. J. C. Thresh reports that the Local Government Board has approved certain by-laws by means of which it will now be possible under reasonable restrictions to build cottages of wood or in part of wood or of lath-and-plaster. It is the contention in some districts that the restrictions placed upon building by the model by-laws somewhat inhibit building in rural districts and it will be interesting to observe whether this modified series will in fact lead to increased building in the Chelmsford rural district. The effect of the excessive rainfall in 1903 has had both a beneficial and a baneful influence in this district—beneficial in that it has replenished springs which formerly were low and baneful in that it has led to a somewhat remarkable outbreak of diarrhœa from the washing of surface pollution into an unprotected tank into which well water was pumped.[1] The incidence of the disease appears to have exerted itself almost exclusively upon the users of the Chelmsford borough water, or, rather, upon a certain section of that supply, and a considerable number of people, mainly over five years of age, were attacked. In that part of Chelmsford borough supplied by the implicated water about 1400 cases are believed to have occurred, while in the rural district to which the present report relates there were 54 cases out of a total population of 250 supplied by the water in question. There were in all 14 deaths, 13 being children and in relation to the water-supply they were thus distributed:—

		Deaths from diarrhœa during epidemic.
Chelmsford borough and Widford village.	5000 persons not using implicated water	0
	7700 persons using implicated water	14
	23,000 persons in the remainder of the union not using the implicated water	0

The outbreak had many points of interest and it is a good illustration of the dangers which are to be anticipated from the use of water liable to be fouled by surface washings. There are a sufficient number of similar outbreaks now on record to justify more attention being paid to this question

[1] Vide THE LANCET, Nov. 28th, 1903, p. 1519.

of water-borne diarrhœa. The symptoms in this outbreak appeared quite suddenly without any premonitory symptoms and they consisted of griping abdominal pains followed by diarrhœa lasting from two to six days. In some cases there was also troublesome vomiting and the symptoms resembled ptomaine poisoning. Some of the medical attendants apparently regarded the disease as gastric influenza but Dr. Thresh does not accept this view and the facts which he adduces lend strong support to his contentions. The water had apparently been so turbid at times as to be undrinkable.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8203 births and 5436 deaths were registered during the week ending March 5th. The annual rate of mortality in these towns, which had been 18·4, 18·5, and 17·5 per 1000 in the three preceding weeks, rose again last week to 18·6 per 1000. In London the death-rate was 17·9 per 1000, while it averaged 18·9 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 8·7 in Handsworth (Staffs.), 10·3 in Hornsey, 11·0 in Burton-on-Trent, 11·2 in Ipswich, 11·4 in Willesden, 11·7 in Walthamstow, 12·3 in Croydon, and 13·0 in Aston Manor; while the highest rates were 23·0 in Great Yarmouth, 23·8 in Sunderland, 24·1 in Rotherham, 24·5 in Walsall, 25·7 in Wigan, 25·9 in St. Helens, and 29·8 in Norwich. The 5436 deaths in these towns last week included 503 which were referred to the principal infectious diseases, against 449, 493, and 420 in the three preceding weeks; of these 503 deaths 176 resulted from whooping-cough, 139 from measles, 71 from diphtheria, 60 from diarrhœa, 33 from scarlet fever, 22 from "fever" (principally enteric), and two from small-pox. No death from any of these diseases was recorded last week in Hastings, Burton-on-Trent, Handsworth (Staffs.), King's Norton, Stockport, Wigan, Huddersfield, York, South Shields, or Tynemouth; while they caused the highest death-rates in Great Yarmouth, Norwich, Birmingham, Wallasey, Bury, Burnley, Leeds, Stockton-on-Tees, Rhondda, and Swansea. The greatest proportional mortality from measles occurred in Norwich, Birmingham, St. Helens, Bury, Leeds, Rotherham, and Rhondda; from scarlet fever in Warrington; from diphtheria in Great Yarmouth; from whooping-cough in Leyton, Portsmouth, Plymouth, Wolverhampton, Coventry, Wallasey, Stockton-on-Tees, and Swansea; and from diarrhœa in Bournemouth, Oldham, and Merthyr Tydfil. The mortality from "fever" showed no marked excess in any of the large towns. One fatal case of small-pox was registered last week in Nottingham and one in Gateshead, but none in any other of the 76 towns. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 24, 29, and 31 on the three preceding Saturdays, had further risen to 41 on Saturday, March 5th; 13 new cases were admitted during the week, against three, nine, and five in the three preceding weeks. The number of cases of scarlet fever in these hospitals and in the London Fever Hospital at the end of the week was 1578, against 1644, 1620, and 1587 at the end of the three preceding weeks; 153 new cases were admitted during the week, against 162, 143, and 150 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 324, 349, and 322 in the three preceding weeks, rose again last week to 371, and were 120 above the number in the corresponding period of last year. The causes of 87, or 1·6 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Salford, Bradford, Hull, Newcastle-on-Tyne, and in 36 other smaller towns; the largest proportions of uncertified deaths were registered in Reading, Handsworth (Staffs.), Birmingham, Liverpool, Bootle, Blackburn, Huddersfield, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 19·2, 22·2, and 21·8 per 1000 in the three preceding weeks, further declined to 21·2 per 1000 during the week ending March 5th, but was 2·6 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 15·4 in Perth and 16·8 in Edinburgh to 24·2 in Paisley and 24·6 in Dundee. The 703 deaths in these towns included 36 which were referred to whooping-cough, 22 to measles, 19 to diarrhœa, five to diphtheria, three to small-pox, two to scarlet fever, and two to "fever." In all, 89 deaths resulted from these principal infectious diseases last week, against 72, 75, and 79 in the three preceding weeks. These 89 deaths were equal to an annual rate of 2·7 per 1000, which was 1·0 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 24, 26, and 21 in the three preceding weeks, rose again last week to 36, of which 11 were recorded in Aberdeen, six in Glasgow, six in Edinburgh, five in Dundee, four in Leith, and three in Paisley. The deaths from measles, which had been 21, 19, and 27 in the three preceding weeks, declined again to 22 last week, and included ten in Glasgow, seven in Dundee, and four in Paisley. The fatal cases of diarrhœa, which had been 20, 18, and 11, in the three preceding weeks, rose again last week to 19, of which 11 occurred in Glasgow, three in Edinburgh, and three in Aberdeen. The deaths from diphtheria, which had been three, six, and five in the three preceding weeks, were again five last week, and included two in Glasgow. The fatal cases of small-pox, which had been one, five, and six in the three preceding weeks, declined again last week to three, of which two occurred in Greenock and one in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 126, 167, and 165 in the three preceding weeks, further declined last week to 155, but were 58 in excess of the number in the corresponding period of last year. The causes of 24, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·2, 29·7, and 27·2 per 1000 in the three preceding weeks, further declined to 26·4 per 1000 during the week ending March 5th. During the past four weeks the death-rate has averaged 27·6 per 1000, the rates during the same period being 17·5 in London and 17·8 in Edinburgh. The 192 deaths of persons belonging to Dublin registered during the week under notice showed a decline of six from the number in the preceding week and included 13 which were referred to the principal infectious diseases, against ten, 16, and 15 in the three preceding weeks; of these, ten resulted from whooping-cough, two from "fever," and one from diarrhœa, but not one from small-pox, measles, scarlet fever, or diphtheria. These 13 deaths were equal to an annual rate of 2·0 per 1000, the death-rates last week from the principal infectious diseases being 1·6 both in London and in Edinburgh. The fatal cases of whooping-cough, which had been six, nine, and 11 in the three preceding weeks, declined again last week to ten. The two deaths from "fever" corresponded with the number in the preceding week. The 192 deaths in Dublin last week included 29 of children under one year of age and 55 of persons aged 60 years and upwards; the deaths of infants showed a considerable decline while those of elderly persons were slightly fewer than the number in the preceding week. Ten inquest cases and five deaths from violence were registered, and 65, or more than a third, of the deaths occurred in public institutions. The causes of seven, or nearly 4 per cent., of the deaths in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING 1903.

COMPLETE statistics relating to sickness and mortality during the year 1903 in each metropolitan borough and in the City of London will be found summarised in the accompanying table. The mortality figures relate to the deaths of persons actually belonging to the various boroughs and are the result of a complete system of distribution of the deaths occurring in the public institutions of London among the boroughs in which the deceased persons had previously resided. With regard to the notified cases of infectious diseases in London during 1903 it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING THE YEAR 1903.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1903.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.													
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
LONDON	**4,613,512**	**416**	**12,531**	**7738**	**22**	**2339**	**40**	**233**	**4372**	—	**27,691**	**6·0**	**13**	**2046**	**361**	**740**	**1627**	**3**	**368**	**5**	**2925**	**8088**	**1·76**	**69,737**	**15·2**	**130**
West Districts.																										
Paddington	146,032	5	417	150	1	44	3	4	119	—	743	5·1	—	40	10	15	54	—	7	—	65	191	1·31	1928	13·2	119
Kensington	178,409	5	335	180	—	66	2	4	177	—	769	4·3	—	34	14	24	90	—	9	—	107	278	1·56	2468	13·9	145
Hammersmith	115,803	7	316	166	—	59	1	6	109	—	664	5·7	—	27	8	17	30	—	9	1	93	185	1·60	1634	14·1	141
Fulham	147,780	11	406	294	—	80	—	19	116	—	926	6·3	—	62	8	24	46	—	15	—	172	327	2·22	2046	13·9	127
Chelsea	74,169	7	209	98	—	13	—	6	55	—	388	5·2	—	14	2	4	29	—	4	—	31	84	1·14	1131	15·3	142
City of Westminster	179,052	45	352	186	—	71	2	5	111	—	772	4·3	3	49	9	15	34	—	14	—	55	179	1·00	2432	13·6	123
North Districts.																										
St. Marylebone	131,234	4	414	228	—	67	4	7	177	—	901	6·9	—	37	17	26	56	—	13	2	59	210	1·60	2148	16·4	96
Hampstead	85,197	1	174	86	—	29	—	1	41	—	332	3·9	—	8	4	10	16	—	2	—	9	49	0·58	848	10·0	88
St. Pancras	235,716	31	656	522	—	88	—	5	224	—	1528	6·5	—	193	23	37	91	—	14	—	90	448	1·91	3806	16·2	133
Islington	319,137	12	867	458	—	131	2	19	228	—	1717	5·1	—	125	24	42	153	—	23	1	121	489	1·45	4837	14·3	126
Stoke Newington	52,069	2	87	40	—	25	1	2	30	—	197	3·8	—	24	—	7	19	—	5	—	21	76	1·46	655	12·6	119
Hackney	224,082	4	667	545	—	271	5	21	281	—	1794	8·0	—	113	21	48	67	—	36	—	112	397	1·78	3099	13·9	119
Central Districts.																										
Holborn	57,845	2	144	52	—	54	2	4	90	—	348	6·0	—	18	5	8	18	—	5	—	29	83	1·44	1072	18·6	96
Finsbury	99,717	2	293	129	—	52	—	8	106	—	590	5·9	—	69	11	11	54	—	10	—	76	231	2·32	2015	20·3	135
City of London	24,539	—	73	27	—	14	—	1	10	—	125	5·1	—	3	1	2	4	—	3	—	8	21	0·86	358	14·6	126
East Districts.																										
Shoreditch	117,513	—	259	154	—	99	1	7	147	—	667	5·7	—	102	7	22	44	—	13	—	152	340	2·90	2273	19·4	171
Bethnal Green	130,028	3	292	242	2	59	1	6	214	—	919	7·1	—	85	12	27	42	—	12	—	112	290	2·24	2363	18·2	141
Stepney	302,153	26	878	543	1	199	—	10	376	—	2033	6·7	4	173	21	58	108	—	27	—	321	712	2·26	5430	18·0	138
Poplar	169,550	28	450	425	—	93	—	8	144	—	1148	6·8	2	161	19	60	80	—	17	—	166	505	2·99	3078	18·2	154
South Districts.																										
Southwark	207,369	40	512	354	—	122	—	13	239	—	1280	6·2	—	83	18	23	68	—	23	—	197	412	1·99	3742	18·1	148
Bermondsey	129,801	7	401	174	16	76	—	9	182	—	865	6·7	—	51	25	18	41	3	12	—	115	265	2·05	2387	18·4	158
Lambeth	307,711	73	745	346	—	136	7	18	231	—	1556	5·1	4	130	23	29	126	—	23	1	194	530	1·73	4659	15·2	125
Battersea	173,422	37	474	314	—	89	—	8	149	—	1071	6·2	—	108	7	29	81	—	17	—	101	343	1·98	2464	14·2	134
Wandsworth	249,678	29	821	532	—	101	3	13	235	—	1734	7·0	—	107	17	44	89	—	18	—	126	401	1·61	3083	12·4	109
Camberwell	285,562	19	665	365	—	103	2	6	233	—	1394	5·3	—	81	13	34	72	—	17	—	142	359	1·36	3627	13·7	123
Deptford	112,537	2	502	456	2	31	1	6	134	—	1134	10·1	—	62	18	45	45	—	4	—	72	246	2·19	1674	14·9	134
Greenwich	99,824	4	164	208	—	44	—	7	73	—	500	5·0	—	28	9	27	37	—	1	—	71	173	1·74	1326	13·3	127
Lewisham	136,435	1	463	278	—	49	—	8	82	—	881	6·5	—	34	11	21	6	—	10	—	49	131	0·96	1516	11·1	92
Woolwich	121,478	6	390	184	—	42	3	2	58	—	685	5·7	—	25	4	13	27	—	5	—	59	133	1·10	1638	13·5	108
Port of London	—	3	2	2	—	22	—	—	1	—	30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

6·0 per 1000 of the population, estimated at 4,613,812 persons in the middle of last year. In the three preceding years the rates had been 7·7, 8·9, and 9·9 per 1000 respectively. Among the various metropolitan boroughs the lowest death-rates last year were 3·8 in Stoke Newington, 3·9 in Hampstead, 4·3 in Kensington and in the City of Westminster, and 5·0 in Greenwich; the highest rates were 6·9 in St. Marylebone, 7·0 in Wandsworth, 7·1 in Bethnal Green, 8·0 in Hackney, and 10·1 in Deptford. The prevalence of small-pox in London during 1903 showed a great decline from that recorded in the preceding year; the number of new cases notified during the year was 416, against 1702 and 7798 in the two preceding years. This disease was proportionally most prevalent in the City of Westminster, St. Pancras, Poplar, Southwark, Lambeth, Battersea, and Wandsworth. The number of small-pox patients admitted into the Metropolitan Asylums Hospitals was 414, against 1788 and 8455 in the two preceding years; four cases remained under treatment at the end of the year, against 666 and 14 at the end of the two preceding years. The prevalence of scarlet fever during the year under notice was considerably less than in the preceding year; the number of new cases notified during the year being 12,531, against 13,809, 18,390, and 18,258 in the three preceding years. Among the various metropolitan boroughs scarlet fever was proportionally most prevalent in St. Marylebone, Bethnal Green, Bermondsey, Wandsworth, Deptford, Lewisham, and Woolwich. During last year 10,808 scarlet fever patients were admitted into the Metropolitan Asylums Hospitals, against 10,734, 14,959, and 15,133 in the three preceding years; the number of cases remaining under treatment at the end of the year was 1606, against 2460, 3080, and 2327 at the end of the three preceding years. The prevalence of diphtheria during last year showed a marked decrease from that in the previous year; 7738 new cases were notified, against 11,994, 12,154, and 10,735 in the three preceding years. The greatest proportional prevalence of this disease occurred in St. Pancras, Hackney, Poplar, Wandsworth, Deptford, and Greenwich. The Metropolitan Asylums hospitals contained 734 diphtheria patients at the end of last year, against 1343, 1369, and 927 at the end of the three preceding years; the new cases admitted, which had been 8777, 9090, and 7988 during the three preceding years, further declined to 6158 last year. Enteric fever showed a considerably diminished prevalence during the year under notice, 2339 cases being notified, against 4306, 3195, and 3412 in the three preceding years; among the various metropolitan boroughs this disease was proportionally most prevalent in Stoke Newington, Hackney, Holborn, Shoreditch, Stepney, and Battersea. The number of enteric fever patients admitted into the Metropolitan Asylums Hospitals during 1903 was 1247, against 2074, 1480, and 1806 in the three preceding years; 246 cases remained under treatment at the end of December last, against 403, 195, and 210 at the end of the three preceding years. Erysipelas showed the highest proportional prevalence during last year in Hackney, Holborn, Finsbury, Shoreditch, Bethnal Green, Stepney, Southwark, Bermondsey, and Deptford. The 233 cases of puerperal fever notified during the year showed a decline of 79 from the number in 1902; 21 cases belonged to Hackney, 19 to Fulham, 19 to Islington, 18 to Lambeth, 13 to Southwark, 13 to Wandsworth, and 10 to Stepney.

During the year under notice 69,737 deaths of persons belonging to London were registered, equal to an annual rate of 15·2 per 1000, against 16·6, 17·1, and 17·2 per 1000 in the three preceding years; the average rate in the ten years 1893–1902 was 18·5 per 1000. Among the various metropolitan boroughs the lowest death-rates last year were 10·0 in Hampstead, 11·1 in Lewisham, 12·4 in Wandsworth, 12·6 in Stoke Newington, 13·2 in Paddington, 13·3 in Greenwich, and 13·5 in Woolwich; while the highest rates were 18·2 in Bethnal Green and in Poplar, 18·4 in Bermondsey, 18·6 in Holborn, 19·4 in Shoreditch, and 20·3 in Finsbury. In the five groups of boroughs the rates of mortality were 13·9 in the west, 14·5 in the north and in the south, 18·3 in the east, and 19·0 in the central. To the principal infectious diseases, 8088 deaths were attributed during the year; of these, 2925 resulted from diarrhœa, 2046 from measles, 1627 from whooping-cough, 740 from diphtheria, 376 from different forms of "fever" (including three from typhus fever, 368 from enteric fever, and five from simple continued fever) 361 from scarlet fever, and 13 from small-pox. These 8088 deaths were equal to an annual rate of 1·76 per 1000; the corresponding rates in the three preceding years were 2·23, 2·22 and 2·21 per 1000 and and the decennial average 2·60 per 1000. Among the various metropolitan boroughs the death-rates from these principal infectious diseases ranged from 0·58 in Hampstead, 0·86 in the City of London, 0·96 in Lewisham, 1·00 in the City of Westminster, 1·10 in Woolwich, and 1·14 in Chelsea, to 2·24 in Bethnal Green, 2·28 in Fulham, 2·32 in Finsbury, 2·36 in Stepney, 2·90 in Shoreditch, and 2·99 in Poplar. The fatal cases of small-pox numbered 13, against an average of 200 in the ten preceding years; of these 13 cases, four belonged to Stepney, four to Lambeth, three to the City of Westminster, and two to Poplar. The 2046 deaths referred to measles showed a decline of 505 from the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in St. Pancras, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Battersea. There were 361 fatal cases of scarlet fever registered last year, against an annual average of 784 in the ten preceding years; the highest death-rates from this disease were recorded in St. Marylebone, St. Pancras, Finsbury, Poplar, Bermondsey, and Deptford. The deaths from diphtheria, which had averaged 2170 in the ten preceding years, declined last year to 740; among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in St. Marylebone, Hackney, Bethnal Green, Poplar, Deptford, and Greenwich. The 1627 fatal cases of whooping-cough showed a decline of 435 from the corrected average number; this disease was proportionally most fatal in Kensington, St. Marylebone, Islington, Finsbury, Poplar, and Battersea. The 376 deaths referred to different forms of "fever" were 292 below the corrected average in the ten preceding years; among the various metropolitan boroughs the highest "fever" death-rates were recorded in Fulham, St. Marylebone, Stoke Newington, Hackney, Finsbury, the City of London, Shoreditch, Poplar, Southwark, and Battersea. The 2925 fatal cases of diarrhœa showed a decline of 754 from the corrected decennial average; the greatest proportional mortality from this disease occurred in Fulham, Shoreditch, Stepney, Poplar, and Southwark. In conclusion, it may be stated that the aggregate mortality in London last year from the principal infectious diseases in the aggregate was 32·5 per cent. below the average.

Infant mortality in London last year, measured by the proportion of deaths under one year of age to registered births, was equal to 130 per 1000, against 158, 148, and 139 in the three preceding years. The rates of infant mortality in the various metropolitan boroughs ranged from 88 in Hampstead, 92 in Lewisham, 95 in Holborn, 96 in St. Marylebone, 108 in Woolwich, and 109 in Wandsworth, to 142 in Chelsea, 145 in Kensington, 148 in Southwark, 154 in Poplar, 158 in Bermondsey, and 171 in Shoreditch.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Majors to be Lieutenant-Colonels (dated Feb. 2nd, 1904):—R. J. Geddes, D.S.O., D. V. O'Connell, A. Dodd, G. Wilson, J. M. Reid, T. B. Winter, F. S. Heuston, C.M.G., G. F. Gubbin, M. O'D. Braddell, J. J. C. Donnet, and H. M. Sloggett.

Major J. Will is seconded for service under the Foreign Office (dated Feb. 20th, 1904). Captain F. S. Walker is placed on temporary half-pay on account of ill-health (dated Feb. 19th, 1904).

Lieutenant-Colonel J. G. Harwood is granted the temporary rank of Colonel whilst officiating as Principal Medical Officer of the Poona District. Lieutenant-Colonel P. Mulvancy is appointed to the medical charge of the Princess Louise Hospital at Alton, Hants.

VOLUNTEER CORPS.

Rifle: 1st Roxburgh and Selkirk (The Border): George McKellar to be Surgeon-Lieutenant (dated March 5th, 1904). Brigade-Surgeon-Lieutenant-Colonel E. Jones, Senior Medical Officer, Welsh Volunteer Infantry Brigade, resigns his commission and is granted the honorary rank of Surgeon-Colonel, with permission to wear the prescribed uniform (dated Jan. 22nd, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Glasgow Companies: Captain D. Christie, from

Argyll and Sutherland Brigade Bearer Company, to be Captain (dated March 5th, 1904). The London Companies: Lieutenant-Colonel and Honorary Colonel J. E. Squire resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated March 5th, 1904). The Manchester Companies: The undermentioned gentlemen to be Lieutenants: Wilfred Edwin Rothwell (dated March 5th, 1904), and Alfred Francis Thompson (dated March 5th, 1904).

VOLUNTEER INFANTRY BRIGADE BEARER COMPANY.

Sussex and Kent: Captain C. J. Jacomb-Hood is appointed to command under paragraph 55A Volunteer Regulations, vice Major J. Turton, appointed Senior Medical Officer, Sussex and Kent Volunteer Infantry Brigade (dated Feb. 3rd, 1904).

THE REPORT ON THE HEALTH OF THE NAVY FOR 1902.

Some excellent reading will be found in the present volume in an article by Deputy Inspector-General Theodore J. Preston, R.N. (retired), under the heading of a "Report on Journals of Medical Officers examined at the Public Record Office, extending from 1793 to 1856." Unfortunately, as it happens, the medical officers of those times had a distaste for clerical work but this did not arise from the want of any interesting material. The extracts are, speaking generally, very short and the information is very scanty but what there is is curious and often quaint and interesting. Taken as a whole, Deputy Inspector-General Preston's paper gives a survey of the state and progress of the naval medical service within the dates specified. As a sample there is a very brief, and therefore disappointing, reference to Admiral Nelson's gunshot wound and amputation of the right arm in the journal of the *Theseus*, July 24th and 25th, 1797, and subsequently on August 20th in the journal of the *Seahorse*. In this connexion it will be remembered that THE LANCET of March 5th (p. 684) contains an interesting communication on "Nelson as a Patient." The notes and extracts from journals touch on all sorts of subjects, such as the constitution and *personnel* of the medical service, medical, surgical, and sanitary matters, epidemic and endemic diseases, food, clothing, and water-supply.

MEDICAL OFFICERS OF THE GUARDS.

A Royal Warrant has been issued to the effect that "All regulations authorising the transfer of an officer of our Royal Army Medical Corps to our regiments of Foot Guards shall be cancelled. Medical officers who have already been gazetted to our regiments of Foot Guards shall elect, within such time as may be prescribed by our Army Council, whether they will remain therein or be transferred to our Royal Army Medical Corps. Medical officers who elect to remain in our regiments of Foot Guards shall be eligible for promotion under Article 383A of the Pay Warrant up to, but not beyond, the rank of Surgeon-Lieutenant-Colonel. Those who elect to be transferred to our Royal Army Medical Corps shall take rank and seniority therein as follows:—A Brigade-Surgeon-Lieutenant-Colonel—as a Lieutenant-Colonel selected for increased pay with seniority from the date of promotion to his present rank. A Surgeon-Lieutenant Colonel—as a Lieutenant-Colonel not selected for increased pay with seniority from the date of promotion to his present rank. A Surgeon-Major—as a Major, with seniority from the date of his original promotion to the rank of Surgeon-Major or Major."

THE ARMY ESTIMATES.

Mr. Arnold-Forster must have found himself in an unusual and somewhat difficult position on the occasion of his introducing the Army Estimates in the House of Commons. The present is a period of transition, indeed, almost of revolution, so far as the army and the War Office are concerned. The War Minister spoke warily, but nevertheless favourably, of the reports of the War Office Reconstruction Committee and it seems nearly certain that, so far as all the main principles are concerned, the committee's recommendations will be adopted by the Government, although strongly opposed by Sir Henry Campbell-Bannerman. Mr. Arnold-Forster added nothing to our knowledge, however, about the intentions of the Government regarding the position of the Army Medical Service under the new scheme. The Army Estimates show a reduction of some £8,000,000, attributable mainly to the expenditure on the Boer war having come to an end and, on less satisfactory grounds, to a reduction in the strength of the Foot Guards and recruiting generally.

RUSSIAN ENGINEERS' SPLENDID CONTRIBUTION TO THE RED CROSS SOCIETY.

The directors of the Putiloff Engineering Works of St. Petersburg, the Krupps of Russia, are placing a sanitary infirmary train at the disposal of the field forces in connexion with the war in the Far East. The cost of this train, says the *Novoe Vremya*, will be over 100,000 roubles (£10,000). It will consist of an engine, a tender, and ten wagons and is at the present moment being rapidly got ready in the special model factory of the firm. The latest improvements have been introduced into the fittings of the wagons for removing the seriously wounded to the smallest detail and everything in connexion therewith answers to the latest requirements of science and the exactions of clinical practice and experience. For the medical staff, dispensary, kitchen, &c., special wagons are fitted and all is arranged to yield the greatest comfort and practical use.

RUSSIAN MILITARY HOSPITAL TRAIN.

On Feb. 24th, says the *Novoe Vremya*, the Russian Empress inspected the military sanitary train No. 13 for the seat of war, consisting of 13 wagons. Of these two are reception wagons for diagnosing cases, four are fitted with "Krüger" frames for the seriously wounded, two are for the slightly wounded, and one is for officers. In one wagon there is the kitchen and there is one set apart for the servants. The train was fitted up in the Alexandrovsk factory of Nikolaevsk in five days. A senior medical officer, five sisters of mercy, and 30 field medical officers from the Nikolaevsk Military Hospital will go with the train.

Correspondence.

"Audi alteram partem."

ON PARACENTESIS AND THE USE OF THE ASPIRATOR IN PNEUMOTHORAX.

To the Editors of THE LANCET.

SIRS,—In a short article on the above subject which appeared in a recent issue of THE LANCET several important questions are raised upon which, as my name is there referred to, I should like to make some comment.

Strange as it may seem, pneumothorax is not always attended by urgent symptoms. The urgent symptoms are not merely mechanical in origin but depend chiefly upon the embarrassment and physiological disturbance in both the respiration and the circulation in the lungs, for though the mechanical conditions remain the same the urgent symptoms gradually subside if the lungs and heart have time to adjust themselves to the altered conditions. The greater the disturbance the more severe the embarrassment and the more severe the symptoms. Thus the paradox is explained that the symptoms of pneumothorax are the more severe the more healthy the patient has previously been. *Per contra*, in phthisis, for example, pneumothorax is not altogether uncommonly discovered by accident, as there may be no symptoms to mark its occurrence, for it makes but little difference to the condition of respiration whether the one lung be useless because it is tuberculous or because it is collapsed. Yet even in persons apparently healthy pneumothorax may be latent—i.e., it may occur without marked symptoms.

In traumatic pneumothorax, with which especially the article referred to dealt, the symptoms are almost invariably severe, but then the diagnosis is not so easy. Rupture of the diaphragm may permit the passage of some of the abdominal viscera, the intestines, of course, chiefly, into the pleural cavity and will give rise to the same mechanical conditions and similar symptoms as pneumothorax. The diagnosis could only be made by careful physical examination of the chest and abdomen but usually the patients are too ill to stand much investigation.

When pneumothorax occurs not only is the one lung completely collapsed, but owing to the displacement of the mediastinum and heart the other lung, too, is partly collapsed, so that the total respiratory capacity may be reduced to about one-third of the normal. With large pleuritic effusion the mechanical conditions may be the same and yet no urgent symptom be present. The difference is due to the fact that in pneumothorax the disturbance is

so sudden, while in pleuritic effusion it takes place gradually, so that the rest of the lung has time to adjust itself to the change of conditions.

Again, we know that the great danger in pneumothorax is in the first few hours. Some patients die at once—from shock as it were; others die after some few hours of intense suffering. But the longer life is maintained the greater is the chance that the urgency of the symptoms may subside. With each hour of continued life the prospects improve. After the first 24 hours the dangers to life are not so much those of dyspnœa as of the complications which are likely to arise, chiefly serous or purulent effusions.

When pneumothorax occurs the lung on the affected side contracts by virtue of its own elasticity and theoretically the contraction may continue till the one lung is completely collapsed and lies like a flattened pancake round its root, while the contraction of the other lung will draw the mediastinum far over into the non-affected side. However, in those cases in which the air is admitted to the pleura by a free incision through the chest walls we see that this does not in fact occur. On the contrary, owing to the cough and expiratory efforts the lung on the incised side is kept moderately expanded or may even nearly reach the chest walls and in these circumstances we know that no urgent symptoms arise. Otherwise the opening of the pleura would be a very serious affair. Hence it would be quite justifiable in cases where life was in danger from the severity of the symptoms to relieve them by laying the side freely open, thus giving the air in the pleura free vent and permitting the lung partially to re expand.

Hesitation would rightly be felt before resorting to this heroic expedient on account of the risk of an empyema resulting and preference would be given in the first place to paracentesis. The object of paracentesis is to give the mechanical relief required, but it often happens that the relief is only temporary. The symptoms soon become urgent again. A second paracentesis has to be performed. It may be also a third or fourth. As a rule the relief becomes greater each time and more lasting and in the end the symptoms lose all urgency until perhaps after some days effusion forms and dyspnœa returns, but even then the dyspnœa is of gradual onset and the symptoms are not urgent. Where one paracentesis is not sufficient the cause is to be found in the fact that the opening in the lung is still patent. When it has closed no more air will enter the pleura and the relief given by paracentesis will be permanent till fluid forms. This shows at once the undesirability of employing the aspirator. The suction employed will stretch the lung and put a strain on the weak spot which may have just closed. This would then be reopened and air would reaccumulate in the pleura immediately the needle was removed. Beside this there is the risk of the suction of the aspirator drawing into the pleura some infective secretion from the lung and thus increasing materially the risk of empyema. For these two reasons the aspirator should never be used in simple pneumothorax; it is unnecessary and, more than that, dangerous. If repeated paracentesis fail it would be safer to proceed to incision. Practical experience shows, however, that incision hardly ever becomes necessary and simple paracentesis, repeated if required, is almost always sufficient.—I am, Sirs, yours faithfully,

SAMUEL WEST, M.D. Oxon., F.R.C.P. Lond.,
Physician to, and Lecturer on Medicine at, St. Bartholomew's Hospital.

Wimpole-street, W., March 5th, 1904.

MALIGNANT GROWTHS AND NORMAL REPRODUCTIVE TISSUES.

To the Editors of THE LANCET.

SIRS,—Professor J. B. Farmer and Mr. F. Cavers, B.Sc. Lond., lecturer in biology at the Technical School, Plymouth, inform me that parthenogenesis is known in plant tissues that have undergone a "reducing division." That the phenomenon of self-fertilisation may prove to be connected with the powers of a metastatic growth to mimic the primary is speculation and may merit observation. The heterotypical cell divisions observed by Professor Farmer and his colleagues and Dr. E. F. Bashford and Dr. J. A. Murray (and which can be seen without difficulty in sarcomata and carcinomata by appropriate methods of fixation and staining) indicate that there is a structural change common to all malignant (atypical) neoplasms at one period of their existence. This is not known in innocent (typical) tumours. I submit that there is also clear microscopic evidence of the transition of sarcomatous forms of cells to those of epithelial forms. In support I mention two instances of growths in which such cell transitions are obvious to me in a careful examination of several sections. The one was a sarcoma of the breast in a woman, aged 52 years, under the care of Mr. C. Whipple at the South Devon Hospital. There were many intracystic growths the columnar cells of which in places were continuous and passed by gradual transitions into large sarcomatous elements. It was the "adenocystosarcoma" of Erichsen, Beck, and Raymond Johnson. Again in a huge diffuse melanotic sarcoma of the liver in a woman, aged 52 years, under the care of Mr. W. L. Woollcombe, the spaces between the hepatic cells were stuffed with rounded pigmented cells of varying sizes. A pigmented mole over the seventh right intercostal space showed pigmented cells in the cutis similar to the smaller ones seen in the liver. I regard the cells in the liver as showing transition from small endothelial to large sarcomatous elements (I place pigmented moles of this nature under the group of endotheliomata on the same grounds that Raymond Johnson and Lawrence place "parotid tumours" under this heading, and remembering the faculty of the liver of intercepting and nourishing new growth I look on the mole as primary). Similarly, H. D. Rolleston and O. Grünbaum note on a perithelioma of the cheek "striking features are the transition from cells of a sarcomatous type to cells exactly resembling columnar epithelium" (this was despite the use of selective "epithelial" stains[1]).

This second link in the chain of atypical growths is not a true metaplasia (defined by S. G. Shattock and C. A. Ballance, quoting Virchow, as the transformation of one normal tissue to another). It is a feature, to my mind, to which attention has been insufficiently directed and appears analogous to those powers by which epithelial and sarcomatous tissue are formed from "indifferent" tissue (e.g., in carcino-sarcoma, in cylindroma carcinomatode, in adeno-sarcoma—the group of tumours excellently designated by H. Snow and C. P. White as blastomata.[2] It approaches in nature true heterology (Virchow). What bearing has it, if any, on the nature of the mitoses? Special observations of such growths are necessary before the question can be answered, but it appears to indicate a previous "sexual" change, thus allowing the succeeding generations of cells to be atypical, under certain stimuli. The heterotype mitoses may be merely terminal phases in the "life cycle of cancer cells" (Bashford) or of sexual cells (Farmer), as in plants and animals. May it not be that cancer is an exhibition of sexual and asexual phases in its life cycle, dependent on environment and intrinsic potentialities, as is the case with protozoa (e.g., malaria), to a colony of which it is compared? The sexual stage may be reinforced by parthenogenesis, nuclear conjugation, &c. We are as yet unaware of the forces (? chemical) which must determine and limit orderly cell growth and which are presumably neutralised in malignant tumours.[3] In a knowledge of these may lie the secret of prevention and remedy.

I am, Sirs, yours faithfully,

F. BUSHNELL, M.D. Lond., D.P.H. Cantab.,
Honorary Pathologist in Charge of the Clinical Laboratory,
Feb. 27th, 1904. South Devon Hospital, Plymouth.

"FILARIA PERSTANS."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of March 5th Dr. H. C. Bastian contributes a paper on the anatomical characters of the so-called filaria perstans and on the mode of infection thereby, part of this being a reply to my paper of Feb. 13th, where I discussed the suggestion that this filaria belonged to the genus tylenchus. There are several points in Dr. Bastian's paper I am sorry to say I cannot again agree with, and as they are of some importance I make this an excuse for again taking up the subject. Dr. Bastian states that I have supposed the figures of tylenchus obtusus in his former article were embryonic forms; this, however, is not the case. What I stated was "that the author had fallen

[1] Transactions of the Pathological Society of London, vol. liv., p. 353; vol. xlvii., 1896, p. 259; THE LANCET, May 31st, 1902, p. 1562.
[2] THE LANCET, Feb. 15th, 1902.
[3] Adami: Yale Medical Journal, 1901.

into a misconception respecting the anatomy of the adult and embryonic forms of this filaria," by this meaning *filaria perstans*, and that he was comparing the adult forms of his tylenchus with the embryonic or larval forms of filaria perstans which to my mind was not permissible.

The points, however, which I specially wish to lay stress on are: (1) the statement that the information that exists concerning the anatomy of filaria perstans is scanty; and (2) the remarks regarding the mode of infection. As regards the first Dr. Bastian states: "In order to ascertain the genus to which a nematode belongs we want descriptions of the adult worms containing, in addition to mere size and external form, particulars as to the nature of the mouth and pharynx, the relative length of the œsophagus and the number of swellings, if any, in its course, together with the situation of the anus, the character of the ovarian tubes, the situation of the vulva, the shape of the male spicules and accessory pieces, as well as any other details that may be recognisable"

I have already[1] described the adult and embryonic forms of filaria perstans in detail and anyone who wishes to read this description may refer to that paper. It will be sufficient here to state that the information relative to the anatomy of this filaria is well known and the answers which I shall now give to Dr. Bastian's queries show this. The mouth of the adult filaria perstans is simple and circular, there are no papillæ nor is there a spine. (The fang or spine was not mentioned in my original paper as there is no such thing in the adult.)

Similarly the pharynx and œsophagus were not specially mentioned as there is nothing peculiar about them. They form a simple tube which merges insensibly into the intestine. There are no swellings on either of them. The course and termination of the intestine were described as follows: it extends almost throughout the entire length of the worm, ending on the concavity of the curve of the tail, in the female at the apex of a slight bulge on the cuticle, in the male at the general level of the cuticle, with four pairs of pre anal papillæ in front and one pair behind, with two unequal spicules, distant respectively from the tip of the tail 0·160 millimetre for the female and 0·120 millimetre for the male. The ovarian tubes were also described and the situation of the vulva accurately given—e.g., 1·22 millimetres from head. This brief *résumé*, I think, disproves the statement "that almost all internal anatomical details concerning the adult forms of filaria perstans appear up to the present to remain unknown." The anatomy of the embryo is equally well known. At the extremity of the head is the little spine or fang which in the living forms may be seen alternately pushed out and then retracted, it measures under 1 μ in length and naturally requires a high magnification to demonstrate it. The other anatomical features are described in my original paper.

As regards the mode of infection and the question of an intermediate host Dr. Bastian is peculiarly unfortunate in his statement that the embryos of filaria nocturna may live and advance slightly in development in the mosquito up to the fourth or fifth day, when the insect then dies and liberates them into the water. Surely the writer has studied the recent work on the life-history of mosquitoes and that on the metamorphosis of the filaria and its escape from the proboscis of the mosquito. This recent literature is so fresh in the minds of everyone that it would only be wasting valuable space going over it all again. It will be sufficient to pass to conclusions, then, and sum up as follows. 1. The anatomy of filaria perstans (adults and embryos) is well known. It is a typical filaria, resembling filaria nocturna and filaria demarquaii. 2. From the analogy of the metamorphosis of filaria nocturna in culex fatigans and other mosquitoes, filaria immitis in anopheles maculipennis (Grassi) and in culex ciliaris (Bancroft), and filaria recondita in pulex serraticeps (Grassi), it is exceedingly probable that the embryos of filaria perstans also find their way into some suitable blood-sucking insect where they undergo a metamorphosis and then eventually pass to a fresh host.

I am, Sirs, yours faithfully,

GEORGE C. LOW, M.A., M.B., C.M. Edin.,
Superintendent, London School of Tropical Medicine.

Albert Docks, E., March 7th, 1904.

[1] Brit. Med. Jour., March 28th, 1903.

THE BEARING OF THE WAR OFFICE CHANGES ON THE FUTURE OF THE ROYAL ARMY MEDICAL CORPS.

To the Editors of THE LANCET.

SIRS,—There can be no doubt in the minds of those conversant with the medical wants of the army of the importance of the point you raise in the leading article in THE LANCET of Feb. 27th, p. 538, under the heading of War Office Changes, on the future status of the Director-General in the new Army Council. So far as the present indications go, it seems probable that this official will be deprived of the position he now holds in the Army Board under Mr. Brodrick's scheme, yet until we have Part 3 of the new army scheme, which will embrace the position of the Army Medical Services, before us, and which "will shortly be ready for submission" by the committee, we cannot be certain of the full intentions respecting him. The ruling principle of this committee seems to be to bring the Army Council as far as possible into conformity with the Naval Board and should this principle hold good for the medical service there is every probability of a grave retrogressive step being taken. One prominent and potent defect in the Army Medical Department in the past was that it was placed under the Commander-in Chief with a Director General selected practically by him and to all intents his agent in military medical affairs, the department thus being but a subordinate section of the combatant branch of the army and having but little voice and less power in its own organisation, working and needs; and the resultant of this anomalous arrangement was shown in the condition to which it was brought prior to the formation of the existent Royal Army Medical Corps, the responsibility for the defects observable in the South African war, with all their sad attendant outcomes, lying beyond all reasonable doubt at the door of the officials filling the posts of Commander-in Chief and Adjutant-General. The formation of the Medical Advisory Board by Mr. Brodrick and the improved status of the Director-General through his inclusion in the higher army councils gave strong grounds to the inference that at last the medical needs of the army had obtained a power of expression and a prospect of practical support hitherto denied them, but should the retrogressive change now outlined be carried out it is apparent that the Royal Army Medical Corps, placed under one or other head of the new Army Council, will be again relegated to the miserably weak and subordinate position previously occupied by it. A belief in a capacity to organise and administer such a professional body as an Army Medical Corps, irrespective of guidance by those who have both professional ability and practical experience of army needs, seems a fixed ingredient in the minds of War Ministers and military officers, and the apparently proposed step of the present committee will do much to still further confirm this idea to the detriment of the service in question. So far the parallelism in the course taken after the Crimean war and the more recent South African war is complete—the same outburst of public indignation, the same exposure of medical deficiencies to meet army field needs, the same undeserved blame falling on the department and its professional head these being made the scapegoat for War Office and military incompetency to properly administer that which they had undertaken, the same official inquiry followed by schemes to rectify defects and to promote improvements, similar expressions of intentions of War Ministers to make the future state of this service all that was desirable, improvements of conditions for attracting a better professional class leading also to an actual competition for posts offered, though not to the same degree as in 1861, the same initiation of changes not suggestive of progress from the adopted scheme on change of the War Minister, and now apparently the same prospective intention to renew the subordination of the professional head to the military section. To those older ones among us who were led into the adoption of a military career by the improvements wrought after the Crimean war and the inducements then held out, and who subsequently found all their hopes frustrated and the ground of advancement cut from under their feet by the whittling away process put into operation by the military authorities and the apathy or impotence of their professional head, the marked importance of prevention

of any further extension of this parallelism is self evident; and as in the past the main help in extracting the department from the "slough of despond" has come from the general professional body, so now the Corps must look to it, and especially the professional members in Parliament and the civil members of the Advisory Board, to present a strong front against the retrograde innovation which is apparently threatened in the composition of the new Army Council by the exclusion from it of the professional head, the Corps itself being markedly curtailed in its power of expression by the conditions under which it exists.

I am, Sirs, yours faithfully,

FRANCIS H. WELCH,
Lee, Feb. 29th, 1904. Surgeon-Colonel (retired) M.S.

THE IRISH BRANCH OF THE BRITISH DENTAL ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—A careful study of the judgment given in the Court of King's Bench Ireland, in the test case of "O'Duffy *v.* Jaffe" will convince any thoughtful man that there are principles and rules therein laid down the importance of which it would be indeed hard to exaggerate. Not alone are existing laws shown to be totally inadequate for the protection of the public from the danger and fraud of unqualified practice (whether dental or medical), but the road is clearly demonstrated by which, if it be not blocked by the Legislature, trickery and deception may even further invade the realm of public interests in professional life.

Briefly stated, the case was as follows. The Irish branch of the British Dental Association determined to bring to an issue the question, which had long been let go by default, whether the restrictions and penalties imposed by the Dentists Act of 1878 upon "persons" using the title of "dentist"—i.e., without being registered—did or did not apply equally to a company or corporation as to individuals; and to obtain instead of "counsels' opinion," which had up to then been considered conclusive, a definite and binding legal pronouncement. They accordingly, as a test case, prosecuted for taking and using the title "Surgeon Dentists," and thus infringing the Dentists Act, "Jaffe, Surgeon Dentists, Ltd.," a company which consisted of two drapers, four married women, and a dental mechanic, none of whom possessed any dental qualification whatever. The case was heard by the local bench at Limerick in May last and, being dismissed, was carried by the plaintiff to the King's Bench. We send you herewith an official copy of the arguments advanced by counsel on both sides and the judgment delivered by the court after some three weeks' deliberation upholding the magistrates' decision.

We would invite a careful consideration of this judgment under three headings. 1. The court unanimously held that the word "person" in the Dentists Act did not include a company or corporation, and a company or corporation can therefore assume with impunity a misleading title, announcing a professional qualification the assumption of which by an individual would subject him to a penalty of £20. The grounds of the decision appear also to apply just as much to the Medical Act and the veterinary surgeons are also affected by it. The public, ever gullible, can thus be legally imposed upon by a company with a high sounding name which an individual (without six "dummies" behind him) would only assume at his peril. Further, not only can a company formed "*ad hoc*" play these pranks with the public but any existing company whose memorandum does not preclude such a thing may boldly assume any medical or dental title; for instance, the Army and Navy Stores would not come within the penal provisions of these Acts by assuming the description of physicians, surgeons, or dentists.

The second point in the case to which we desire to invite attention is this: counsel for "Jaffe, Surgeon Dentists, Ltd.," ingeniously put forward a further line of defence. The point raised was this: "The defendants have added nothing to their name; 'Jaffe, Surgeon Dentists, Ltd.,' is their name." How this argument impressed the court was shown by the Lord Chief Justice asking the following question: "If a man be born with the name 'Dentist' can he be prosecuted under this Act for using his name?—e.g., 'John Dentist'"? The significance of the defence was, therefore, not lost sight of and in the formal judgment of the court the point was decided as follows:—

The Lord Chief Justice (Lord O'Brien) said: "Person, I think, means a person who having one name takes another name or description, that is a natural person who has his own name and adds to it another name or description. It would seem to me not to include a company which comes into being with a name and adds nothing to it." Judge Gibson said: "The question before us is, whether a company, part of whose registered name is 'Surgeon Dentists,' by using that name committed an offence under Section 3 of this Act. The Act was never designed to apply to a corporation at all or to prevent a limited company from using its own proper name in which it was registered." Judge Madden agreed in the judgment of the court without specially referring to this point.

The case being on the criminal side of the court no appeal could be taken from the decision. This, then, being the law it appears that any fraud or deception on the public by a company, involving the assumption of a false or misleading title or name as of doctor or dentist, can be, and is, legalised by the irresponsible action of the Board of Trade in registering as a company, without question, any such name, title, or description which is presented to it; for, be it understood, the Board of Trade has no power to question or refuse any title brought to it for registration as a company saving only when such title has been already appropriated by some other company, and this registered title, though knowingly and wilfully intended to deceive by those who form the company, becomes forthwith the "proper name" under which the company "came into being"; its right to the use of which is as clear and indisputable as the right of Lord O'Brien's supposititicus "John Dentist" to the use of his own patronymic. The hall porter from the hospital may then, should he desire it, rest secure in the name of "Sir Peter Smith, Doctor and Surgeon," and the bottle-washer in the pharmacy may undisturbed prey upon the public as "Sir Ebenezer Dodd, M.D. Lond." An individual would be liable to penalties and imprisonment, but on constituting himself a "company" by virtue of six "dummy" names behind him, under the ægis of the Board of Trade, the company or the individuals who compose it are beyond the reach of all penalties. In fact, anyone may gull the credulous under a name, with the addition of doctor, physician, surgeon, dentist, veterinary surgeon, or any other "proper name" which may suit his purposes, and under which he may elect to "come into being." To the lay mind there is some difficulty in seeing where the line is to be drawn or what limit exists to the assumption of titles by a "one man company." All one has got to do is to form himself into a "one man company."

The third important point in the judgment is the outspoken opinion of the court on the position as it stands and the judicial suggestion of a remedy. "Before, as well as since, the Dentists Act," said Lord O'Brien, "the Legislature has not infrequently failed in its policy and object owing to the inappropriateness and inadequacy of the language it employed. The ingenious have often invented, and I daresay will often invent, devices to get out of Acts of Parliament. ..... We cannot import the words which are necessary to hit the device and reach the mischief."

Judge Madden says: "If the general intention of the Legislature in regard to the protection of the public has been frustrated, and I believe it has, this is a necessary consequence of the language that has been employed." Further on he speaks of "the mischief against which the present prosecution is directed," and finally crystallises the suggestion of himself and his colleagues in these words: "The Legislature, if it thinks fit, can pass a statute specially directed against the mischief which has recently come into existence."

The importance of enlisting the aid of your valuable journal in rousing public opinion amongst professional men and also amongst your colleagues of the lay press, and drawing attention to the incalculable effect of this judgment of the Irish Court of King's Bench, must be our apology for making such a large demand upon your space, and we feel convinced that when the facts come to be widely known to the profession and the public such pressure will be brought to bear upon Parliament as will insure the effectual ending of this anomalous condition. We are advised that a short Act of Parliament providing that the penal clauses of the Medical, Dental, and Veterinary Surgeons Acts, under which unqualified persons are prevented from taking or using

the titles of doctor, surgeon-dentist, veterinary surgeon, &c., shall apply to companies would have the effect of putting an end to an audacious and rapidly increasing fraud not only on professional men but on the public.

We are, Sirs, yours faithfully,

HERBERT WILLIAMS,
President.
A. W. W. BAKER, M.D. Dub., F.R.C.S.I.,
Past President Irish Branch B.D.A.
GEO. M. P. MURRAY, F.R.C.S.I.,
Past President Irish Branch B.D.A.
KEVIN E. O'DUFFY,
Honorary Secretary.

Dublin, March 3rd, 1904.

*** The decision of the King's Bench Division in Dublin is exceedingly to be regretted, particularly as further appeal in the Irish courts is impossible.—ED. L.

PREVENTION OF INFECTIOUS DISEASE IN BATH.

To the Editors of THE LANCET.

SIRS,—The notes under the above heading from your Wales and Western Counties correspondent in THE LANCET of Feb. 27th, p. 614 seem likely to give a wrong impression of the relations existing between the medical officer of health and the sanitary committee of this city. As I am the councillor to whom allusion is made I hope you will allow me space for a few remarks.

In the first place, I should like to say that the committee as a whole, and especially I myself, fully recognise that in Dr. W. H. Symons we have got a most efficient and energetic medical officer of health. Sometimes, however, his energy and anxiety for the city's welfare seem to outrun his discretion, and this, it appeared to me, was so in the case especially alluded to by your correspondent. I inclose you two notices lately sent out by Dr. Symons. In the one dealing with measles and whooping cough I took exception to the paragraph on the first page which speaks of a penalty of £5 to which a person is liable for exposing himself while infected in the streets. Your correspondent says I "expressed the opinion that Section 126" of the Public Health Act of 1875 "only applied to those diseases which were scheduled" and not to measles and whooping-cough. I would point out to him that this is not a question of *opinion* at all; it is simply a matter of fact: the section does only apply to scheduled diseases. At a subsequent meeting to that referred to, I offered to support Dr. Symons if he wished to have measles and whooping-cough included in the schedule. While, however, he did not advise our doing this, he was still of opinion that the clause, which I claimed was misleading to the public, should be retained since, among other reasons, "it was done elsewhere." Two cases had recently come to my knowledge in one of which the mother of a child suffering from whooping-cough was afraid of bringing her child to the hospital for treatment; and in the other was afraid of going out to earn her living because of the penalties to which she thought, from reading this notice, she was rendering herself liable.

The other notice I inclose you was sent to all the medical men practising here. In it you will see we are reminded that it is *illegal* to remove patients suffering from notifiable diseases in public carriages, although Section 127 of the Public Health Act especially provides for what is to be done in the event of patients being so removed. That it is most undesirable for public carriages to be used for this purpose everyone will allow, and luckily here in Bath with our ambulance accommodation it is not necessary, but why tell the profession that what an Act of Parliament especially provides for is illegal? As I said at the beginning I have great respect for Dr. Symons's energy and ability, but I cannot support him in the issue of notices that are incorrect and misleading, simply from a mistaken desire of doing good thereby. "Bluff" may succeed in other matters, but it is neither politic nor dignified in the administrator of public health.

As to the bacteriological examination in suspected diphtheria, to which your correspondent also alludes, seeing that in this case the reporter had found Hoffmann's bacilli, which he especially said were not regarded by the "Cambridge school" as pathogenic, I said that, whilst not wishing to hamper Dr. Symons in any way, I hoped he would use discretion in sending cases for examination. I am entirely at variance with your correspondent as to excluding the press from the ordinary meetings of the committee. The health of our city is so good that we have nothing to keep dark, but if his advice were followed there would not be the same public confidence that this was so.

I am, Sirs, yours faithfully,

Bath, Feb. 29th, 1904. PRESTON KING, M.D. Cantab.

EYESTRAIN AND ITS REFLEXES DEPENDENT UPON LOW ERRORS OF REFRACTION.

To the Editors of THE LANCET.

SIRS,—Will you pardon me a few words of reply to your courteous editorial concerning eyestrain, in your issue of Feb. 6th, just at hand? The essential point in the controversy is entirely omitted by your writer and this is that the low errors of refraction are the cause of the reflex troubles which you think I exaggerate as due to eyestrain. This I have emphasised all through my writings and prove every day in private practice. And not only myself but hundreds of other American oculists. The very condition of success in curing these patients is, we contend, the very thing you frankly ignore. There is no more clearly demonstrated fallacy, no greater scientific error than that exhibited in your own quotation from Donders as to the unimportance of errors of less than a dioptre. These small errors of astigmatism are the causes of the troubles of the patients, reports of whose cases I have published, and of thousands in private practice. The statements as to the care and accuracy of most English and continental ophthalmologists are erroneous and the editorial demonstrates this. The low errors, the low degrees of unsymmetric astigmatism which cause migraine, are ignored in the editorial which is, you say, made up from the opinions of London oculists. It is a perfectly simple matter to demonstrate the truth of my contention. A good oculist by correcting the low errors (those below a dioptre) will cure many or most of the migrainous patients excluded from your oculists' offices by "a clean bill of health" as regards their eyes. Conversely, if those who give the clean bill of health will wear a pair of spectacles producing artificially such low errors of astigmatism they will have a most convincing migraine very speedily. It is not fair to my argument to ignore entirely the low error of refraction which repeatedly, emphatically, and continuously I have said is the cause of the sufferings due to ocular conditions. Nor does it seem fair not to present another fundamental argument of both volumes of my "Biographic Clinics": the fact that every one of the 14 patients whose histories are there described suffered because of near use of his eyes, and got immediate relief only by stopping reading and writing, when exercising out of doors, &c. A thousand quotations demonstrate this fact. Can it be explained on any other theory than eyestrain? Why is there such a strange disinclination of reviewers, critics, and editorial writers to mention this fact which is the substance of the mass of quotations of both books? Respectfully yours,

GEORGE M. GOULD.

Philadelphia, Pa., U.S.A., Feb. 23rd, 1904.

*** We publish Dr. Gould's letter with pleasure, but we remain of the same opinion. It is not correct to suggest that our ophthalmologists are ignorant of the possible constitutional trouble that will follow slight errors of refraction; while we are certain that the results of these errors have been exaggerated.—ED. L.

BILHARZIA HÆMATOBIA.

To the Editors of THE LANCET.

SIRS,—In reply to Mr. E. H. Worth I desire to state that a patient of mine who is suffering from this disease contracted it in the Komati Poort Valley of the Transvaal, where he was severely wounded in the disaster to Colonel Benson's column. Whilst in the military hospital he tells me that he took (?) a solution of boric acid, but said "that he always felt worse afterwards and lost more blood." I have found that his hæmaturia has almost disappeared, the lumbar pain

has been banished, and his health proportionately improved whilst he has been taking the following: one drachm of sodium salicylate, two drachms of compound tincture of gentian, one drachm of tincture of strophanthus, two drachms of chloric ether, and infusion of buchu to one ounce.

I am, Sirs, yours faithfully,

Ewell, Surrey, March 2nd, 1904. PERCY RENDALL, M.D.

THE BATTLE OF THE CLUBS AT SOUTHAMPTON.

To the Editors of THE LANCET.

SIRS,—With reference to the article in THE LANCET of Feb. 13th respecting the battle of clubs in Southampton I beg to say that it is a tissue of false and erroneous statements all the way through. Your informant is evidently very ignorant of what he is writing about. In the first place, he states that the Dock Provident Society *imported* a medical man. This is untrue, as I had taken a house in Southampton before I knew of the existence of the society and it was some days after that I saw the advertisement for a surgeon in the local paper. I replied to this and was duly elected by the committee. As to the society being the means of founding the Medical Federation in the town, this is false, as the society has nothing to do with the federation and never had. So far from not having sufficient work to do I may say that I had a very busy year as this being one of the oldest registered societies in the town it led up to many others, and I may say that with a very few exceptions I have met with nothing but expressions of gratitude and many acts of kindness from all the members. With regard to the London and Manchester and the National Medical Aid I have never had anything to do with them. I believe the latter society was bought up by one of the medical officers of the federation. With regard to the female O. F. they pay the same rate as the males; if it pays the medical officer for one why not for the other? They are all young women and seldom trouble one. From what I hear many of the medical men who stuck out for 6*s.* 6*d.* are now offering to take them for 5*s.* per annum *if they can get them*. It appears to me these men have acted like a set of schoolboys instead of business men. The federation is an amalgamation of various clubs, is exceedingly well managed, and is rapidly increasing in numbers. I inclose a cutting from the local paper respecting the club question. The Southampton Provident Medical Association has attacked the smaller clubs but is afraid to attack the larger societies, which in my opinion shows its weakness. The numbers which your correspondent states have joined the association are not correct.

I am, Sirs, yours faithfully,

ARTHUR GRAHAM,
Surgeon to the Dock Provident Society; Surgeon to the Medical Federation, Southampton.

Southampton, Feb. 23rd, 1904.

P.S.—I wish to state that I have always been opposed to well-to-do tradespeople deriving benefit from these clubs.

*** We were informed that Mr. Graham applied for the post under the Dock Provident Society from an address in London, which certainly pointed to importation. He has since told us that he had already arranged to take a house in Southampton before receiving the appointment, a circumstance which alters the position. Our information does not bear out his statements that the Dock Provident Society has nothing to do with the federation and that the federation is rapidly increasing in numbers. With regard to the number of adherents to the Southampton Provident Medical Association the figures were obtained from a source that ought to be trustworthy and a general statement that they are not correct does not impress us. Our correspondent must point out the error in detail when, if he is right, we shall be happy to say so.—ED. L.

MISTLETOE.

To the Editors of THE LANCET.

SIRS,—It has occurred to me that the following note may be of interest to your readers in connexion with the annotation on the subject of mistletoe which appeared in THE LANCET of Jan. 9th, p. 111. The substance of the note is translated from a well-known work in Persian on Materia Medica, the *Makhzanu l-Adwiya* (Storehouse of Medicines), compiled by one Muhammad Husain Khān in the year 1185 of the Hijra, corresponding to 1771 A.D. His statements concerning the mistletoe may be regarded as embodying the opinions of all the oriental authorities up to the date of his work. It will be seen that mistletoe was looked upon as injurious to the heart rather than beneficial. The author writes as follows:—

"*Dibq*,[1] called also *quās*, and in Persian *Mawizak-i-'Asah'* (the honey-creeper) and *Kishmish i-kāwaliyā* (the Cābuli raisin), is a berry smaller than the chick-pea, of a greenish colour, and when it dries its skin shrivels and turns black. It contains in its interior a glutinous moisture and the seeds are of the size of poppy seeds. The plant grows on the pear and other trees, several twigs shooting from one point. The leaves resemble somewhat those of the mūrd[2] and the pomegranate; they are delicate in texture and greyish-green. The best kind when fresh are smooth and round. Their colour inside is like that of the leek and the outside inclining to greenness, blackness, and redness. Their constitution is hot in the extreme of the second degree and dry in the first degree, possessing an excess of moisture which is not glutinous. Certain authorities consider it hot and dry in the third degree. Its properties are compounded of the essence of aerial heat and aqueous coolness, with a slight admixture of earthy astringency, and after being ingested by anyone its special effects are (speedily) manifested.

Its special action and properties.—It is attenuant, discutient, and laxative—efficacious in dispersing thin and gross humours and absorbing them from the depths of the body. When it is macerated in warm water and the skin and seed are separated from the juice by squeezing, and the pure juice mixed with the kernels of the walnut or with the pulp of the fruit of the *Bidanjir*[3] (which is the usual way of drinking it), it is effectual in purging away the black bile and mucous humours; also useful as a deobstruent and in sciatica, fistulous sinuses, and cold abscesses. An ointment compounded with it ripens and melts down and collects the matter in swellings and allays cold pains, while with turpentine and wax it is used for the ripening of boils, pustular eruptions of mucous origin, and phlegmatic tumours, also for softening the joints. Mixed with *zarnikh*[4] it is also used for the last three purposes and with gummastich it is used for malignant ulcers and with arsenic and pitch it is used to extract the nails. With quicklime and grape juice and honey it is used to make the nails grow again. With henna[5] it is used in the treatment of impetigo and dandruff, also with oil of roses for making the hair grow long. A decoction of it in lime water is useful in removing swellings of the spleen, while a paste of it made with lime is a means of removing induration of the spleen and is also useful in drawing out gross humours from the depths of the body. It is injurious to the heart, the corrector of this influence being the *Bādranjbūyah*.[6]

The quantity to be taken [? of this decoction] is up to one *misqāl*[7]; a larger quantity causes gripes and vertigo with heaviness of the limbs. In lieu of it, as an equivalent in discutient power, is half its weight of juniper berries and four *dāngs*[8] of almonds, and in all cases half its weight of *Āgir karhā*.[9] When mistletoe berries are cooked with honey, syrup of dates, and *sapistān*,[10] and made into long fine threads, it is put on the surface of trees, when any bird that settles sticks to the tree and is caught. When it is mixed with *Qirmiz*[11] it intensifies its (crimson) colour. It forms an ingredient also in many other colours."

With apologies for the length of this note,

I am, Sirs, yours faithfully,

GEORGE RANKING, M.D. Cantab.,
Lieutenant-Colonel, I.M.S.

Calcutta, Feb. 6th, 1904.

[1] Viscum album.
[2] Murd, Myrica Gale.
[3] Ricinus communis.
[4] Zarnikh is the name for arsenic (= azzarnikh) in all its forms. It is probably yellow orpiment which is here intended to be used.
[5] Lawsonia inermis.
[6] There is a little uncertainty as to what is meant by this name. By Abdullah Shīrāzi, court physician to the Emperor Shāhjehān, it is said to be the sweet basil, called in Hindi Julsi (Ocymum sanctum). That author also includes it in his list of cardiac tonics (Alfāzi Adwiyah).
[7] The *misqāl* was equivalent to 96 barleycorns in weight.
[8] The *dāng* was equivalent to 16 barleycorns in weight.
[9] Agirgarhā, Anthemis pyrethrum.
[10] The fruit of cordia myxa (cordia sebestana).
[11] Kermes, coccus baphica.

THE IRISH MEDICAL DEGREE PRIOR TO 1858.

To the Editors of THE LANCET.

SIRS,—In a book lately published by Mr. R. Brudenell Carter entitled "Doctors and Their Work," the following statement occurs (p. 8): "While such was the state of things in England (i.e., prior to the Medical Act of 1858) it had been from time immemorial the custom of Scottish and Irish universities to confer degrees in medicine after examinations which were mainly medical in their scope, and which could not be held to establish more than a modest amount of acquirement in scholarship or general knowledge. In these divisions of the Kingdom, therefore, the degree and title of 'Dr.,' instead of being confined to the highest grade of the profession, belonged of right to the great body of general practitioners and represented something essentially different from that which they represented in England."

As far as Ireland is concerned nothing could be more remote from the truth. The University of Trinity College, which up to 1852 was the only university in Ireland, has from time immemorial made a degree in arts an indispensable condition of degrees in medicine, as well as in all other faculties, except music. Among the "Regulæ Universitatis Dubliniensis" is this: "Ad Baccalaureatum in Medicina nemo admittatur qui prius Baccalaureatum in Artibus non susceperit." Not only so, but of all British universities Trinity College is (with the comparatively unimportant exception of Oxford) the only one all of whose graduates in medicine are also of necessity graduates in arts. It is true that at the time of which Mr. Carter speaks there were many general practitioners and apothecaries in Dublin styling themselves "Dr.," but they invariably had Scottish qualifications. Mr. Carter has promised to correct the error should his book reach a second edition.

I am, SIRS, yours faithfully,

T. K. ABBOTT,
Senior Fellow and Senior Proctor, Trinity College, Dublin.

OPIUM AND PNEUMONIA.

To the Editors of THE LANCET.

SIRS,—I was much interested in your leader in a late number on the subject of "Opium and Pneumonia" because I have been convinced for the past 15 years that that drug has a deal to answer for in the mortality from the disease. Let us consider what is the condition at the moment of crisis of that grave disorder. The lung is occluded with a thick tenacious slime almost impossible to throw off. The right heart is battling to get the blood through this occluded lung. And what is done by giving opium or any of its derivatives? The tenacity and thickness of the slime is increased and at the same time the heart's power is enfeebled and bewildered, also that of the respiratory centre. Could any therapeutic power be less well directed? We enfeeble and shackle the cardiac and respiratory powers at the very time their utmost strength is required and at the same time add to the obstructive power, the tenacity and dryness of the slime. Surely this is clear, but what is the excuse for such a mode of treatment? Oh, it dulls and stills pain and restlessness and the patient "feels better." Better? Yes. Euthanasia! The necessary pain and restlessness must not be dulled; they are requisite for recovery. *Excessive* pain may be relieved by other means—a few leeches, an ice-bag, &c., or even a minute hypodermic dose of morphia not sufficient to have a constitutional effect. Aconite, too, is a most dangerous drug in pneumonia, given to "lower the temperature." But, alas, it paralyses the cardiac centre. Such drugs as digitalis and strychnine must also be given with great discretion, for though they may increase the cardiac power it must be remembered that they also increase the muscular tone of the arteries and therefore resistance to that power.

Now it is universally admitted that pneumonia is due to a microbe and its toxins. It appears to me that treatment should be directed to the destruction of that microbe and its effects and that symptomatic treatment should be entirely secondary. With that view I have now for many years prescribed salicylate of soda with liquor ammoniæ acetatis and in suitable cases (threatened heart failure) spiritus ammoniæ aromaticus. The salicylate not only helps to arrest the rapid multiplication of microbes but it rapidly throws off the toxic products through the kidneys. The acetate of ammonia not only counteracts any cardiac depression (though I have never noticed any as especially due to the salicylate) but also liquefies and loosens the thick "slime" in the lung and makes it the more easy to expectorate it. If we cannot be sure we are giving the right drug let us stand aside. Nature alone will do better than we. Let us be sure we do not add the last straw to the burden in the terrible crisis.

Influenced by these views I have in later years only used the drugs I have mentioned in this dire disorder and the result has been that I have never lost a case. I have had most serious cases, one in delirium tremens where another medical authority thought there was no hope, but the patient rapidly got well. Within the last few months I have had two cases of pleuro-pneumonia in aged people the results of which are striking. The one, aged 69 years, a very healthy life previously, declined to take the salicylate, as he said it made him feel sick. He recovered from the immediate attack but developed an empyema which, after repeated aspirations (the pneumococcus abundant in every specimen of the pus), killed him by developing complications elsewhere (operation was declined). The other, aged 76 years, an equally severe attack, took the salicylates readily, had a copious serous effusion in the pleura, but has recovered completely.—I am, Sirs, yours faithfully,

Lancaster, March 6th, 1904. C. A. RAYNE, M.D. Lond., &c.

THE SETON IN MÉNIÈRE'S DISEASE.

To the Editors of THE LANCET.

SIRS,—Referring to Dr. T. Wilson Parry's very interesting communication, may I be permitted to point out that I described a case of Ménière's disease successfully treated by the seton in the *British Medical Journal* of March 29th, 1902, p. 806? It was suggested to me by Mr. Walter Whitehead's remarkable success in the treatment of migraine. I am, Sirs, yours faithfully,

Southport, March 8th, 1904. COLIN CAMPBELL.

THE ADULTERATION OF COD-LIVER OIL.

To the Editors of THE LANCET.

SIRS,—I am perfectly in agreement with Mr. E. J. Parry in his contention that the value of cod liver oil is due to the facility with which it is digested and absorbed and not to any active principle. In this sense his use of the word "traditional" is justified and therefore possibly other fats have not had their fair share of consideration. Virol, to which he refers, the fatty portion of which is chiefly supplied by bone-marrow, is a substance which we have largely used at the Children's Hospital here with excellent results, young children taking it with facility and advantage. Possibly it would be well, remembering how scarce and expensive cod-liver oil has become, if we were to investigate the whole subject of the value of the various available animal fats *de novo* and determine their relative advantages on their merits alone, eliminating any element of tradition.

I am, Sirs, yours faithfully,

L. A. PARRY, M.D. Lond., F.R.C.S. Eng.

Hove, Sussex, March 8th, 1904.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Vaccination amongst Ancient Hindus.—Increase of Plague.

A POINT of immense historical interest has lately been referred to by a writer in the *Madras Mail*. It practically consists in the discovery that vaccination as we know it, and not merely inoculation for small-pox, was practised in ancient Hindu days. In the "Sactaya Grantham," an ancient treatise attributed to Dhanwantri, the writer after describing nine species of small-pox lays down rules for the practice of inoculation (? vaccination). The translation of the passage is as follows: "Take the fluid of the pock on the udder of a cow or on the arm between the shoulder and elbow of a human subject on the point of a lancet and lance with it the arms between the shoulders and elbow until the blood appears; then mixing the fluid with the

blood the fever of the small pox will be produced." Again, "The small-pox produced by the fluid from the udder of a cow will be of the same gentle nature as the original disease, not attended by fear, not requiring medicine; the diet may be according to the pleasure of the patient who may be inoculated once only or two, three, four, five, or six times. The pock when perfect should be of a good colour, filled with a clear liquid and surrounded by a circle of red; there will be no fear of the small-pox as long as life endures. When inoculated with the fluid from the udder of a cow some will have a slight fever for one, two, or three days, and with the fever there will sometimes be a slight cold fit; the fever will also be attended by a round swelling in the armpits and the other symptoms of small-pox but all of a very mild nature. There will be no danger and the whole will disappear in three days." These extracts are taken from the *Madras Courier* of Jan. 12 h, 1819. Maclean, in the Manual of Administration, referring to Dhanwantri, says that Sanskrit treatises on medicine bear his name and I am also informed that there is a Tamil medical work which has been printed known as Dhanwantri Cauvyam and which is a treatise on Hindu medicine. I have not yet been able to verify these quotations but the writer in the *Madras Mail* has kindly furnished me with the above references and translations.

The plague epidemic is steadily increasing with ominous signs in certain districts. In Central India the deaths are over 1000 a week, whereas last year they were numbered in tens. In the United Provinces the plague mortality is nearly double that of last year and there is a marked increase also in the Punjab. The disease seems to be declining in the Bombay districts but is developing rapidly in Bombay city. A recrudescence is also showing itself in Calcutta.

Feb. 18th.

CHOLERA IN THE TURKISH EMPIRE.

(FROM THE BRITISH DELEGATE ON THE OTTOMAN BOARD OF HEALTH.)

SINCE the date of my last letter on this subject (which appeared in THE LANCET of Jan. 23rd, p. 255) cholera has not been very active in any part of the Turkish empire. The infection has, however, reached the important town of Basra, at a short distance from the head of the Persian Gulf, and occasional cases are—or were till quite recently—reported from Syria. It is clear, therefore, that the cholera infection is still present over a very wide area, though showing no great intensity in any part of that area.

In Bagdad the disease appears to have died out, as no case has been reported from there since Jan. 7th. The same statement holds for Kerbela, where no case has been observed since Jan. 12th. The extent of the outbreaks in these places will probably never be known. The sanitary officer of Bagdad states that there, and still more in Kerbela, a large number of cases occurred which never came to the knowledge of the authorities. In Kerbela he thinks the cases were at least double those reported officially. In Diarbekir the last known case occurred on Jan 9th and in Mossoul on Jan. 6th. At Hindieh, near Kerbela, it was reported as late as Jan. 30th by a medical officer who had just visited the place that cases were probably occurring among the nomad tribes in the neighbourhood without their coming to the knowledge of the authorities.

The outbreak at Basra seems to have begun on Feb. 6th though the cases were not seen by the sanitary officer until the 8th. On the latter date he telegraphed that he had seen two women and a child, inhabiting different houses and different quarters of the town, all of whom had fallen ill on the 6th and all presenting the symptoms of cholera. The source of infection in these cases has not been determined. The further course of the disease here has been as follows. From Feb. 6th to 12th there were seven cases with four deaths, from the 13th to the 20th there were six cases with six deaths, and from the 21st to the 28th there have been as many as 13 cases with 19 deaths. The least satisfactory feature in the later reports has been the fact that so many of the cases have only been discovered after death. On Feb. 9th the Board of Health imposed five days' quarantine on arrivals from Basra. For persons ascending the river from Basra to Bagdad a temporary lazaret was established at Kermet-Ali, a place about two hours' distance from Basra. On the 17th a case of cholera was observed among the passengers of the s.s. *Mossoul* which had arrived at the lazaret from Basra on the 15th. The patient died in the lazaret two days later. On the 20th another case developed among the passengers of the same ship and a third case among the crew of a sailing ship undergoing quarantine. A fourth case was observed in the lazaret on the 21st. All of these cases ended fatally. Up to the 28th the total cases of cholera in the town of Basra and the lazaret of Kermet-Ali together have been 30 and the deaths 33.

To-day news has been received of the occurrence of a "suspected" case of the disease at Korna, a village at the junction of the Tigris and Euphrates. No details of this case have as yet been made known.

In the Aleppo vilayet cholera has been almost, though not quite, extinct during the months of January and February. It will be recalled that a single case of the disease was observed in Aleppo itself on Jan. 5th. Another was reported on the 24th of the same month. No other case has been since reported. At Aintab, to the north of Aleppo, a fatal case was observed on Jan. 19th. Both of these cases (in Aleppo and Aintab) were spoken of as "suspected" only, but all measures were taken as for undoubted cholera cases.

In the Syria vilayet no cases of cholera have been officially reported since the beginning of the year, but on the first day of the year news was received of the appearance of the disease at Nibe and at Inebe, two places in the district of the Hauran. Mention must also be made of a "suspected" case at Latakia on Jan. 3rd. The Hauran district suffered considerably from cholera last year. Whether the disease is still active there or not it is impossible to say as no definite news has been received from there since Jan. 1st, but it is to be noted that in successive reports from the medical officer on special mission at Damascus it is stated that news from the Hauran, and particularly from the Ajloun district, is "far from precise" or "disquieting" or that the presence of cholera is rumoured there.

The total number of cases of cholera in the Turkish empire from March of last year to Feb. 22nd of this year is put down at 7652 and of deaths at 6550. The estimate I made in my last letter as to the extent to which the official totals may be believed to differ from the actual totals has been thought by many to be far too moderate. Some would place the true figures at double or even treble the reported figures.

Constantinople, Feb. 29th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Health Committee.

AT the last meeting of the city council the resignation of Mr. John Parker, inspector of nuisances, was received and accepted. Mr. Parker had been in the service of the corporation for a period of 22 years, first as an assistant inspector and since 1885 as inspector; he has always been a most active officer and great regret was expressed that the committee was losing his services. On the recommendation of the health committee, which advised that in a city of the size of Birmingham there was need for the services of an assistant medical officer of health, the council created that post and appointed thereto Dr. J. Doig McCrindle. This gentleman was also appointed inspector of nuisances of the city at a salary of £300 per annum. Dr. McCrindle has been in the service of the health department since June, 1902, first as medical superintendent of the small-pox hospital and recently, since the decline of the disease, he has been assisting the medical officer of health. In his new appointment he will be responsible for all measures taken for the prevention of infectious diseases and will have charge of the disinfecting staff and apparatus. The milk-shop inspector, the lodging-house inspectors (two men), and the canal-boat inspector will also be under his charge. Mr. Frank Thompson, who has acted as chief inspector of nuisances since 1898, has now been appointed inspector of nuisances and will be responsible for all matters relating thereto, such as the conversion of pan-privies into water-closets, the repair of defective drains, yards, &c. He will have under his charge the 19 district inspectors, four smoke inspectors, and the court cleaners. The health committee has advised the council that, in addition

to the two male inspectors who carry out duties under the Factory and Workshops Act, 1901, there ought to be a woman inspector whose duty it should be to supervise the workshops in Birmingham where female labour is employed. There are over 10,000 workshops and workplaces in Birmingham, including a large number of places where food is prepared for sale, and in addition to these there is a large number of shops which require occasional inspection under the Shop Hours Acts and the Seats for Shop Assistants Act. During the past year 1927 cases of chicken-pox were notified at a cost to the city of about £230. The object of adding chicken pox to the list of notifiable diseases was to enable any doubtful cases to be visited immediately by the medical superintendent of the small-pox hospital. In practice, however, it has been found necessary to visit only those cases to which the medical men directed special attention as being doubtful. On the recommendation of the committee the order for notification of chicken pox has been rescinded and it is to be left to medical practitioners to call the attention of the health department, as they are now doing, to any case in which they would like the diagnosis verified. Alderman Cock, in moving the adoption of the recommendations of the committee, stated that small pox had passed away from the city and that the small-pox hospital was entirely empty. It had not been absolutely closed because there were still cases at Leicester and other places not far from Birmingham, and they might any day have a case in the city, but they were only retaining the staff necessary for keeping the hospital in proper order. The members of the committee had had an anxious time with regard to the disease but they claimed that they had been successful in preventing it spreading. As a rule the cases appeared in tramps found in lodging houses or the workhouse and they were still seeing that every supervision was exercised so that they might deal with the first case that made its appearance. The council would see how infinitely important this supervision was when he told them that during the past year their inspectors found no fewer than 28 persons in lodging houses who on medical examination were proved to have small-pox.

Rural Depopulation.

Mr. A. Lane, of Broom Court, a well-known Warwickshire farmer, has issued a new scheme for the formation of an association to prevent the migration of so many of the agricultural labourers to the towns. His idea is that an association should be formed connected with the Bidford Flower Show and Sports, to provide for young men, who have hitherto earned their wages on the land for a certain number of years, a bounty when they marry and settle down in the district. The scheme was discussed at a meeting of subscribers to the flower show. The ideal to which Mr. Lane aspired was a cottage occupied by a young and healthy couple, with a garden attached to be well stocked with vegetables and fruits. He suggested that members should pay, perhaps, 2*s.* a year for a period of five years and in return should receive a sum of £10 towards furnishing a cottage when they desired to marry. He thought that it would be a great advantage to the district as it would encourage labour, especially in the growing of fruit and vegetables. There was a difficulty about the providing of cottages, but he thought that the landlords would be encouraged to help in this if they saw the labourers doing their part to make the scheme work. He suggested, too, that the Government might grant loans to the owners of land for the purpose of building cottages. He proposed that the subscribers to the show should form themselves into an association for the purpose of helping young men who had already worked on the land and were desirous of settling there. The scheme was also advocated by the Rev. R. P. Ridsdall. Mr. G. H. Fosbroke, medical officer of health of Worcestershire, said that he was going to give evidence before the Commission on Physical Deterioration and his evidence would be to the effect that the labourers must have greater facilities and the power and opportunity to become actual owners of land and houses. The Worcestershire county council had put the Small Holdings Act of 1902 into force with great success and he asked why the same could not be done in Warwickshire. He suggested that the Warwickshire county council should be approached to assist labourers to acquire land and to build houses. He feared that Mr. Lane's proposal would not give the labourers sufficient interest to remain in the country and landlords could not build houses now except at a loss. A committee was appointed to consider Mr. Lane's scheme and to report to a future meeting.

The Dean of Worcester on Vivisection.

The Dean of Worcester recently presided at the annual meeting of the Worcester branch of the Society for the Prevention of Cruelty to Animals. The report recorded a prosperous year's work and that the society was in a flourishing condition. The committee felt very strongly on the subject of vivisection that no case should ever be performed by any but licensed and experienced professors and always under the influence of an anæsthetic and that the animal should be destroyed immediately afterwards. The Dean expressed his agreement with the views of the committee on the subject of vivisection. He had recently been asked to sign a petition and to speak in Birmingham against vivisection but had declined to do so as he believed in it. He thought that there was a good deal of ignorance in the public mind as to such experiments; cruelty was not permitted by the regulations and people should remember the benefits conferred on the human race by vivisection. He protested against the caging of singing birds and the destruction of larks to make a dish and of other birds solely for the purpose of ornamentation. Canon Cresswell Strange expressed his dissent from the opinions of the Dean on the subject of vivisection, to which the Dean replied that if the society was opposed to his views on this subject he should feel compelled to withdraw from the presidency.

Birmingham Sanatorium.

The Lord Mayor presided at the thirty eighth annual meeting of the subscribers to the Birmingham and Midland Counties Sanatorium held recently. In its annual report the committee announced that it had received a draft order from the Charity Commissioners approving the scheme for extending the sanatorium by the aid of Colonel J. H. Wilkinson's generous gift of the property at Sutton Coldfield. Building operations would be commenced as soon as the preliminaries could be arranged. The alterations comprise the removal of the present kitchen and the erection in its place of a handsome dining hall capable of seating 110 patients; also of a new kitchen, servants' sitting room, larder, and scullery on a portion of the yard adjoining the building and an additional dormitory over each wing of the original structure. The system of drainage is to be remodelled. It was estimated that the alterations would absorb the whole of the proceeds of the property at Sutton Coldfield. The statistical tables for the year showed a slight falling off in the number of patients admitted, there being 1418 in 1903, against 1482 in 1902, while the number of days' stay was 25,592, compared with 26,867 in the previous year. The average stay was nearly one day longer. The average number of patients in the institution was 70·1, against 73 5. The difference arose partly from the decision of the committee not to admit consumptive patients and partly from the smaller number of special tickets purchased by the committee of the Hospital Sunday Fund and by the trustees of the Ronakes Charity. The total of the subscriptions was £1825 15*s.*, as compared with £1908 8*s.* 9*d.*, and the subscriptions carried forward amounted to £998 17*s.* 6*d.*, against £1031 8*s.* 6*d.* The cost of maintenance remained the same as in previous years, but the yearly expenses per bed had increased by £2 11*s.* This increase was attributable to the special expenditure in fire appliances and to the cost of renovating the whole of the mattresses.

March 9th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The late Mr. John Thomson.

By the death after a short illness of Mr. John Thomson, chairman of the Manchester Royal Infirmary board, Manchester has lost one of her most valuable citizens. For a long period he was a member of the old infirmary board but on the long debated question of the removal or of the rebuilding of the infirmary on the Piccadilly site he favoured the removal. When the trustees at a meeting in 1902 decided to rebuild on the Stanley-grove site the greater number, including the much respected chairman, Mr. Edward Heywood, resigned their seats and Mr. Thomson was elected chairman of the new board. From that time to the date of his fatal illness he rendered invaluable service to the institution. His conciliatory bearing, the outcome in his case of genuine kindness of heart, combined with his great business capacity, was most helpful in overcoming difficulties and smoothing

down differences. The loss of him will long be felt. One of the honorary staff said the other day that it was irreparable and another spoke warmly of the great interest which he showed in the medical school and also in the students over whom his influence was all that was good. He was a member of many of the important commercial institutions of the city and as chairman of the Bankers' Institute he advocated the establishment of a faculty of commerce at the Owens College. In 1901 he was president of the Chamber of Commerce. He was, moreover, actively interested in most of the philanthropic work in the city and for over 25 years he left his pleasant home at Bowdon every Sunday and Wednesday to conduct a Bible class in Hulme. He was a Liberal but did not take any very active part in politics till the last few years, and last autumn he was chosen as the Liberal candidate for one of the divisions of Manchester. He was broad-minded and tolerant and his friendships were not narrowed by his politics. As regards recreation he was fond of outdoor sports, was a good shot, and a capital angler. His funeral was marked by indications of widespread respect and regard.

Manchester Royal Infirmary.

The infirmary board held a special meeting yesterday to receive the report of Mr. J. J. Burnet of Glasgow, the assessor appointed to consider the plans for the new infirmary in Stanley-grove. 12 firms of architects were invited to prepare plans and those selected were found to be the work of Mr. Edwin T. Hall and Mr. John Brooke of London and Manchester, who were yesterday appointed by the board the architects for the building of the new infirmary. The surveyor of the board reports that the plans will entail an expenditure of £324,000, with an additional £16,500 if the full 600 beds are provided. All the designs submitted to the assessor will be exhibited in the course of the next few weeks at the City Art Gallery. The board reserves the right to alter or to vary the plans and before they are finally approved a meeting of the trustees must be held for the purpose of endorsing the action of the board.

Cremation for Paupers.

At the meeting of the Manchester board of guardians on March 2nd the question of cremation for paupers, which had been before it previously, was again referred to. At the previous meeting it was decided that the cost (£5) would be too great. A letter was read by the clerk stating that the directors of the crematorium "were willing to take into consideration the cremation of paupers at a cost of somewhere about 10*s.* each, which would include the use of the crematorium chapel, the decoration of the same with plants, and the use of the pall." On sanitary grounds no doubt cremation is unobjectionable, if not, indeed, distinctly desirable, and one gentleman thought that it should be carefully considered both on sanitary and economical grounds but that it could be carried out only when there were no relatives to claim the bodies. Another said that they ought to have some regard for the sentiment of the poor for there were many to whom cremation would be repugnant. There is no reason to fear that the Manchester guardians will deal harshly in the matter.

Anthrax in Manchester.

On Saturday last, March 5th, a man was admitted to the Manchester Infirmary from Levenshulme suffering from anthrax. It was supposed that he had been inoculated (in the arm) from a beast which he had killed. While arrangements were being made for his removal to the Monsall Hospital, for it was not a case to be kept at the infirmary, he left the building and does not appear to have been traced. Yesterday a young man from Sandbach was admitted also suffering from anthrax and it came out that he had dressed the beast which the first man had killed. He was at once sent to the Monsall Hospital.

March 8th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Small pox in Cardiff.

A CASE of small-pox was reported in Cardiff on March 1st, the patient being a dock labourer. The whole of Wales has been singularly free from the disease for many months. In Cardiff during the second quarter of 1903 there were 45 cases notified and two deaths occurred, both of persons over 25 years of age. In the second half of the year not a single case came under the notice of the medical officer of health.

Death of Mr. Denis Nyhan, L.R.C.P. & S. Edin., L.F.P.S. Glasg.

Through the death of Mr. Denis Nyhan on March 1st at the early age of 32 years a very promising career has been cut short. He succumbed to an attack of pneumonia after an illness lasting only five days. He was a native of co. Cork and received his medical education at Queen's College, Cork, taking his diplomas at Edinburgh and Glasgow in 1897 and almost immediately settling in Brynmawr, Breconshire, where at the time of his death he held the positions of medical officer of health and certifying factory surgeon.

Tredegar Health Report.

In the annual review for the year 1902 of the sanitary condition of the county of Monmouth the sanitary committee of the county council animadverted upon the condition of Tredegar, the criticisms apparently having reference to the high death-rate—22·9 per 1000—and to the prevalence of typhoid fever. The annual report of the medical officer of health of Tredegar (Mr. G. A. Brown), which has been recently issued, shows that very different conditions prevailed in 1903 when the adjusted death-rate from all causes was only 17 per 1000 or lower than any death-rate recorded in the district during the previous ten years and there were only 11 cases of typhoid fever notified compared with 42 in 1902, while a still more satisfactory feature of the report is to be found in the decreased rate of infantile mortality which in 1903 was 127 per 1000 births compared with an average rate in the previous ten years of 160 per 1000. This result is in some degree, no doubt, due to the excessive amount of rain which fell, the rainfall for the year having been 83 inches, whereas the average for the preceding 22 years was 58 inches. The district is not well sewered and the river which flows through it, though at times a raging torrent, is sometimes a mere brook and little better than a stagnant sewer.

The Recent County Council Elections in the West of England and South Wales.

Mr. John Meredith, M.D. Edin., has been returned for the Wellington district of the Somerset county council. Mr. E. J. Parry, M.D. R.U.I., has been returned for the Garw Valley district of the Glamorganshire county council. Mr. R. L. Thomas, L.S.A., has been returned for the St. Clears district of the Carmarthenshire county council. Mr. Howell T. Evans, M.R.C.S. Eng., D.P.H. Cantab., has been returned for the Bedwellty district of the Monmouthshire county council. Mr. W. Dyne Steel, M.D., C.M. Aberd., has been returned for the Abergavenny district of the Monmouthshire county council. Mr. T. Hall Redwood, M.D., M.S. Durh., has been returned for the Rhymney district of the Monmouthshire county council.

Health of Torquay.

The medical officer of health of Torquay (Dr. T. Dunlop) in his annual report for 1903 states that the area of the borough is 3858 acres, the estimated population being 33,800. The crude death-rate was 13·4 per 1000, against an average of 15·9 per 1000 for the previous eight years; the corrected death-rate was 13·3 per 1000, as compared with 14·4 per 1000 for the preceding eight years. Excluding visitors the death-rate was 11·5 per 1000. The zymotic death-rate was 0·35 per 1000. The birth-rate was only 15·8 per 1000 but Torquay contains a higher population of persons at the more advanced periods of life than obtains in the population of the country as a whole. Referring to deaths from phthisis Dr. Dunlop states that when deaths occur in private houses a notice is forwarded to the householder offering to fumigate the rooms with formalin free of cost, but this offer has only been accepted in a small percentage of cases. Dr. Dunlop adds that he believes a word from the medical attendant advising such fumigation would have more effect than any number of notices.

March 7th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Annual Dinner of the Edinburgh Royal Medical Society.

THE annual dinner of the Edinburgh Royal Medical Society was held on March 3rd. Owing to the illness of Dr. Shaw, the senior president, Dr. D. C. Ll. Fitzwilliams presided.

Sir William Turner, K.C.B., was the guest of the evening, whilst among the other guests present were the Lord Provost, Colonel Trevor, R.A.M.C., Sir John Batty Tuke, M.P., and the Rev. Dr. Cameron Lees. The toast of "The Guest" was given by the chairman in felicitous terms and was responded to by Sir William Turner in a most interesting and kindly manner.

Appointment of a King's Physician in Scotland.

The intimation that Professor Sir Thomas Fraser has been honoured by being appointed one of His Majesty's physicians in Scotland, has given rise to much satisfaction in university circles. The last holder of this honour in Edinburgh was Dr. George W. Balfour.

Small-pox in Edinburgh.

While there has been no alarming increase in the number of cases of small-pox reported in Edinburgh, fresh cases keep appearing at the rate of two or three each week and enough to keep the public health authorities actively on the alert.

Royal Edinburgh Asylum for the Insane.

The annual meeting of the corporation of the Royal Edinburgh Asylum for the Insane was held on Feb. 29th. The annual report of the managers showed that the daily average number of patients of all classes during the year 1903 had been 917, a decrease of 30 as compared with the preceding year. This decrease was mainly in the rate-paying patients who had numbered 542, as against 566 in the preceding year. In addition to the rate-paid patients accommodated in the asylum the managers had to find accommodation in other asylums for 153 patients from the Edinburgh city parish. The number of voluntary patients under treatment had been 25. The ordinary revenue amounted to £58,762 12*s.* 2*d.* and the ordinary expenditure to £53,868 5*s.* 8*d.*, leaving a surplus of £4894 6*s.* 6*d.* From this surplus the sum of £1970 was deducted as the annual instalment towards the liquidation of the debt on the West House, leaving a free surplus of £2924. The report of Dr. T. S. Clouston, the physician-superintendent, stated that the admissions last year numbered 411, of whom 196 were men and 215 were women. The total number of patients under treatment during the year had been 1361. The number of patients discharged had been 313, of whom 145 were men and 168 were women. The deaths numbered 119, of which 64 occurred in men and 55 in women. The majority of the deaths had resulted from one of four diseases—viz., general paralysis of the insane, senile decay with brain disease, tuberculosis, and apoplexy and ordinary brain softening. With regard to tuberculosis there had only been three deaths from that disease in Craig House since it was opened nine years ago and all three cases had been imported. In the West House there had been a considerable amount of tuberculosis and during the last ten years—the years of overcrowding—there had been a decided increase in the number of cases of that disease. Dr. Clouston then commented at some length on the increase of insanity and especially on the increase of alcoholic insanity. He suggested that the epidemic of influenza of 1890 by lowering the nervous tone might have tended to set up a craving for the stimulus of alcohol. Dr. Clouston concluded by making a plea to the general public to take a more rational view of mental disease which should be simply regarded as a disease of the brain and looked on in the same way as other diseases.

March 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Private Entrée at Dublin Castle.

THE private entrée at Dublin Castle has been restored to the President of the Royal College of Physicians of Ireland and the President of the Royal College of Surgeons in Ireland.

Small-pox on Achill Island.

A serious outbreak of small-pox has recently occurred on Achill Island, where between 20 and 30 cases are now being treated. It is said that the disease was imported from Glasgow in which city it is now prevalent. Mr. D. Edgar Flinn, one of the medical inspectors of the Local Government Board, visited the island with a view to advising as to the best means of preventing the spread of the affection. A temporary isolation hospital has been opened by the district council under the superintendence of Mr. T. H. Croly, the dispensary medical officer of the island, and the services of trained nurses have been obtained. A large proportion of the island population live under housing conditions which are most unhealthy, while the sanitary state of some of the congested villages is very bad.

Public Health of Dublin.

In connexion with the approaching visit of His Majesty the King it is satisfactory to note that the death-rate of the city of Dublin is lower than usual. At a meeting of the public health committee held on March 1st Sir Charles Cameron reported that the death-rate from all causes for the week ending Feb. 27th, 1904, was 28·1 per 1000 persons living, the mean death-rate in a corresponding period of the previous ten years being 35·3. The death-rate for the Dublin registration area for 1903 was the lowest recorded, being 22·8 per 1000. The zymotic death-rate was also the lowest on record, being only 1·5, as against a mean rate of 2·8 for the previous ten years.

Health of Belfast.

From the report presented at the meeting of the city corporation on March 1st it appears that the number of cases of typhoid fever and the deaths therefrom have been very few and the disease seems to be dying out. The deaths from whooping-cough (there is at present a widespread epidemic) are still very numerous. During the month eight cases of small-pox were notified. The public health committee wish measles, whooping-cough, and phthisis all to be included amongst the notifiable diseases. It is unfortunate that the existence of small-pox is being concealed in the houses and the efforts of the sanitary officers to remove patients to the small-pox hospital are being resisted. It has been decided to grant £250 per annum for three years to deal with the foreshore nuisance at Cultra. 162 cases of zymotic disease have been notified between Jan. 24th and Feb. 20th—viz., 47 cases of scarlet fever, 40 of erysipelas, 26 of typhoid fever, 18 of diphtheria, 17 of simple continued fever, eight of small-pox, and three each of puerperal fever and membranous croup.

Queen's College, Belfast.

The Misses Riddel, who recently gave a munificent gift of £12,000 to the Royal Victoria Hospital, have presented £5000 to Queen's College, Belfast, for the purpose of founding a "Riddel demonstratorship in pathology and bacteriology" in connexion with the Musgrave chair of pathology founded by their cousin, Sir James Musgrave, Bart., D.L., in 1901. This endowment will secure a permanent assistant in the pathological laboratory.

Royal Victoria Hospital, Belfast.

At the bi-monthly meeting of the board of management of this hospital on March 2nd the Right Hon. W. J. Pirrie, on behalf of Mrs. Pirrie, handed over cash and securities to the value of more than £48,000, raised by her as an endowment fund for the hospital. This sum, together with the donation just mentioned of the Misses Riddel and £1000 given by the Right Hon. Thomas Sinclair and his family, brings the endowment fund up to £60,000, a sum in addition to £100,000 collected by Mrs. Pirrie for the building and equipment of the hospital. The following motion, which was proposed by the chairman, seconded by the Dean of Connor, and supported by Professor J. W. Byers on behalf of the medical staff, was then passed by acclamation:—

That the board hereby desire to place on record their sense of profound gratitude to Mrs. Pirrie for her untiring and most successful efforts on behalf of the hospital which have to-day culminated in her handing over to the hospital cash and securities of a value over £48,000. They desire also to cordially acknowledge the services rendered by Mr. Pirrie in freely devoting so much of his time to perfecting the plans and arrangements of the hospital and in making it so many generous and opportune gifts.

Mrs. Pirrie, who was much affected, said that the work had been to her a labour of love and her one hope was that the hospital which was so near to her heart would prove a real boon to those for whose benefit it had been erected. The annual meeting, at which Mr. Pirrie is to preside, will be held on March 22nd.

The Lectureship on Medical Jurisprudence in Queen's College, Belfast.

No better selection or more popular appointment could have been made than that of Dr. Thomas Houston as joint lecturer on medical jurisprudence in Queen's College, Belfast.

March 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Cancer.

AT the meeting of the Academy of Medicine held on Feb. 25th M. Doyen read a paper in which he reminded the meeting that he had previously notified the existence of a microbe peculiar to cancerous tissues—namely, the micrococcus neoformans. This microbe when injected into animals had caused the formation of various tumours. Since 1901 he had treated 126 cases of malignant growth with injections either of cultures of the microbe of variable virulence or of its toxins. Of these 126 cases 58 had not benefited in any way, 47 were still under observation, and 21 might be considered as cured. Of the 47 cases under observation 29 had not so far shown definite enough signs one way or the other for an opinion to be arrived at, but they had improved at least temporarily. The remaining 18, although they had manifestly improved, were not included among the cures, for the new growths, although they were being absorbed, had not yet completely disappeared. The remaining 21 patients in whom the new growths had completely disappeared M. Doyen reckoned as cured. The tumours comprised lymphadenoma of the testicle with secondary growths in the groin, sarcoma of the muscles of the thigh, cancer of the stomach, cancer of the uterus with secondary growths in the pelvis, cancer of the tongue, epithelioma of the face with affection of the lymphatic glands, sarcoma of the tonsil, and epithelioma of the breast.

The "Femme Tuberculeuse."

A new department of social hygiene has just been set on foot in Paris under the name of "La femme tuberculeuse." Its object is to protect the young girl, the mother, and the child from tuberculosis by offering those who are menaced by the disease an opportunity of living in wholesome air during the period of enforced rest which may be considered necessary for the repair of their constitutions. The society has opened a dispensary in the Rue Carpeaux where mothers are taught how they should bring up their infants and where they can obtain milk of good quality so that they can give up suckling. The dispensary will also look after the disinfection of the lodgings and clothing of the tuberculous and will help the sick to live as hygienically as possible. Housewives and young girls can also be taught the elements of housekeeping at the dispensary which will be open on holidays. A house which has been leased in the suburbs will serve for a house of rest and in it there will be room for 120 pensioners. Finally, a convalescent home will be established in the centre of France where pensioners will be able to stay for six months in fresh air. The administrative council and the committee of patronage comprise various well-known medical men, such as Dr. Bouchard, Dr. Brouardel, Dr. Budin Dr. Armand Gautier, and Dr. Pozzi. The subscription may be as low as one franc per annum.

Acid Medication of the Duodenum.

At the meeting of the Academy of Medicine held on Feb. 16th M. Enriquez read a paper in which he recalled the researches of Hallion, Delezenne, Frouin, and himself upon the above subject. He considered that the therapeutic problem was how to bring an acid in contact with the duodenal mucous membrane. For his own part he had had recourse to capsules of tartaric acid. The capsule was made of gluten, a material which is refractory to the action of the gastric juice in an acid medium but which is easily attacked in an alkaline medium. He had treated in this way 16 patients in the wards under the charge of M. Brissaud and M. Ballet. In seven of these who suffered from marked constipation the bowels became regular. In five patients who suffered from constipation and muco-membranous colitis there was a rapid improvement in the symptoms. In three cases of nervous motor dyspepsia the treatment had a markedly favourable influence upon the subjective symptoms, such as feelings of weight, sleepiness, and swelling. It would appear therefore that acid medication of the duodenum exerts a special influence upon the secretory functions in man.

Limitation of the Dietetic Use of Chloride of Sodium in Hyperchlorhydria.

Now that the importance of the proportion of chloride of sodium present in the fluids of the body is recognised, and in consequence also of the researches of M. Widal on the subject of "déchloruration," attention is being given to the relation which an increased quantity of chloride of sodium in the fluids bears to hyperchlorhydria. Chloride of sodium is the only inorganic alimentary principle which is insufficiently represented in ordinary food and consequently has to be added specially thereto. It is somewhat singular that the desire for chloride of sodium which everyone experiences varies a good deal with the nature of the food. The carnivora can do without it very well but it is indispensable to the herbivora. It is certain that those who live in towns and are meat-eaters to a great extent take only a fourth of the quantity of chloride of sodium used by the peasantry who eat a larger proportion of vegetables. Some persons, however, take an excessive amount of chloride of sodium, even as much as three quarters of an ounce or an ounce per day. The kidneys, which are the organs of elimination, are thereby overworked and it is thought that many cases of nephritis originate in this way. At any rate, patients suffering from nephritis very soon improve when they are placed on a dietary decidedly poor in salt and in them it is possible to cause œdema and swelling of the legs to disappear and to reappear at will by withholding salt in the one case and supplying it in the other. The relations of chloride of sodium to disease of the stomach are not less singular. It is reasonable to suppose that the hydrochloric acid of the gastric secretion is formed at the expense of the chloride of sodium. Persons who take little salt have weak stomachs and in tropical countries, where much salt is eliminated by the perspiration, the functions of the stomach are impaired, whilst on the other hand those who take large quantities of salt without the justification afforded by a diet mainly vegetable suffer from overacidity of the gastric juice and some degree of interference with the action of the kidneys. It has therefore been proposed to treat hyperchlorhydria by restricting the ingestion of salt as in the case of nephritis. The subject was discussed not long ago by M. Linossier at a meeting of the Society of Biology and at the same meeting M. Laufer said that in cases of obstinate hyperchlorhydria with occasional exacerbations and vomiting the patients improved considerably when taking ordinary mixed diet without the addition of salt, but every time that they took two or three grammes (30 or 40 grains) of salt with their food the pain returned.

The Budget of the Assistance Publique for 1904.

The budget of the Assistance Publique for 1904 has reached the sum of nearly 64,000,000 francs. Despite various economies which have been carried out the expenses of the year 1903 have exceeded the estimates by over 1,200,000 francs. Food and drink are responsible for 655,000 francs of this excess and the consumption of milk goes up every year, the yearly sums expended for this beverage having risen from 484,000 francs in 1891 to 1,189,000 francs in 1903. It must not be thought that the number of patients has increased in this proportion, for the patients have only increased by 15 per cent. and the consumption of wine has not proportionately diminished. Expenses due to extra comforts supplied to nurses have also increased, while the surgeons have exceeded the estimates for dressings, instruments, and apparatus by 80,000 francs.

March 8th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A New Remedy against Sea-sickness.

ANÆSTHESIN, which was recommended by Professor von Noorden in the treatment of cases of gastric hyperæsthesia, nervous dyspepsia, and gastric ulcer, has also proved efficacious in sea-sickness. Dr. Schliep formerly a medical officer of a passenger steamer, writing to the *Deutsche Medicinische Wochenschrift*, says that on his voyages to America, Australia, and the Pacific he used to administer anæsthesin as a prophylactic to passengers who on previous voyages had suffered from sea-sickness. From three to four half-gramme powders were given during the first few hours at sea and were repeated on the following day, the result being that the majority of those passengers were not sea-sick. The remedy proved efficacious even after the first symptoms such as giddiness and loss of appetite had made their appearance, but no benefit was

obtained when sea-sickness had fully set in, the patients being as a rule too much overcome by their sensations to swallow any medicine at all. It is essential to administer full doses of from two to three grammes a day from the beginning. The use of the drug is not attended with any risk or danger. Dr. Schliep recommends, therefore, that antisthesin should form part of the stock of medicines carried on board ship.

Dentition and Tuberculosis.

In a paper read before the Berlin Medical Society Dr. Westenhoeffer gave an account of some experiments on the occurrence of tuberculous infection in early life. He made subcutaneous injections of tuberculous material in the lumbar region of 120 guinea-pigs, 30 rabbits, and three calves. The small animals died after two or three months and the calves were killed after that time. At the necropsies caseous changes were found at the site of the injection and in the inguinal, retroperitoneal, and in some cases the mesenteric and perirenal glands. The spleen and the liver were often tuberculous, whilst tuberculosis of the lungs was rather rare. Tuberculous infection might obviously spread through the lymphatic vessels. In 12 cases where the bronchial glands were tuberculous miliary tuberculosis of the lungs was the sequel, an observation in accordance with Professor Behring's views. Dr. Westenhoeffer found in his researches that sometimes the course of the tuberculous infection was rather irregular, not always going along the lymphatic vessels, so that glands of distant regions were affected whilst intermediate glands were still healthy. Attention was drawn to the fact that tuberculosis was never present in children under three months of age and is rather frequent after the first year. Dr. Westenhoeffer was of opinion that the frequency of glandular tuberculosis in that period is in connexion with dentition, during which the mucosa of the mouth becomes swollen and somewhat inflamed so that infection may easily occur. Similar conditions exist in the lower animals. Nearly all mammals are either born with teeth or get them within the first fortnight after birth. The only exception is the pig, in which animal the teeth are late in making their appearance. It was remarkable that tuberculosis developed in pigs after dentition and that the lymphatic glands of the neck became swollen first just as in the scrofula of children. Dr. Westenhoeffer said that the frequency of tuberculosis of the lymphatic glands in the poorer classes was principally due to the uncleanly state of their homes. Children during dentition were inclined to put things in their mouths, a practice which is not free from risk in insanitary surroundings. Alluding to Professor Behring's theory as to the propagation of tuberculous infection through the intestines he said that the alleged permeability of the intestinal mucosa only existed in the first two days of life; the intestines of children and of adults did not differ as to their liability to tuberculosis. He agreed with Professor Behring that the struggle against tuberculosis must begin in childhood, although the points of view from which they regarded the general question of tuberculous infection were different in some respects.

March 7th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

The First Successful Ovariotomy performed in Switzerland.

THE following details may be of interest to the medical profession in England. In December, 1903, a clergyman's widow died at Zürich at the ripe age of 83 years, succumbing to senile marasmus aggravated by broncho-pneumonia. Nearly 40 years ago she suffered from an abdominal tumour which threatened her life. After various methods employed to prevent the rapid growth of the tumour had all signally failed her medical attendants and Professor Breslau, who at that time occupied the chair of obstetric medicine at the University of Zürich, called in Mr. (afterwards Sir) Spencer Wells of London who performed laparotomy on July 13th, 1865, and removed an ovarian tumour weighing a little over 56 pounds (25 kilogrammes). The patient rapidly recovered and outlived most of her medical attendants. It may be mentioned here that a Dr. Carl Gustav Jung performed the first laparotomy (which, however, was unsuccessful) in Basle as early as 1851.

Attendance at Medical Schools in Switzerland.

The number of medical students entered at the five Swiss universities during this winter term, 1903-04, amounted to 1654, a slight decrease as compared with 1686 in the corresponding period a year ago. The fair sex still preponderates, there being 891 lady students (874 of whom are foreigners) and 763 male students; of the ladies five are studying at Basle, 151 at Geneva, 177 at Zürich, 181 at Lausanne, and 377 at Berne. The total number of medical students at each of the five universities is as follows: 140 at Basle, 275 at Lausanne, 307 at Geneva, 388 at Zürich, and 544 at Berne. The establishment of a medical school reserved for lady students is being seriously discussed in the lay and medical press.

Fulminant Hæmorrhagic Purpura.

Dr. A. von Lerber has published an account of a rare case of purpura terminating fatally in 12 hours. The patient was a healthy girl 13 months old, one of a healthy but slightly neurotic family. The child had not been ill except once when she had a slight attack of bronchitis which did not call for medical treatment. During the night of Jan. 5th she became restless and seemed very collapsed at 6 A.M., so that a medical man was called in. At 7 A.M. on the 6th he found the child quietly taking food. Distributed over the chest, arms, and legs he observed a number of hæmorrhagic spots of a bluish-red colour of about the size of lentils and even larger. The pulse was quick but there was no pyrexia. He prescribed a warm bath. Called in again at 9.30 A.M. he found numerous similar spots coming out all over the face and body, some as large as a five-shilling piece. At 11.30 A.M. the temperature was 99° F., the respirations were 60 per minute, and the pulse could not be counted. The child became comatose and passed away quietly at 1 P.M. A post-mortem examination was not permitted. Dr. von Lerber remarks that a sister of the patient died four years previously from broncho-pneumonia at the age of two years after a skin eruption which may have been either measles or a "similar skin affection," as the mother called it.

Zürich, Feb. 29th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

American Nurses for the Japanese Army.

THE United States is to aid in nursing the wounded and sick Japanese soldiers. Dr. Anita Newcomb McGee, who organised a corps of nurses during the Spanish-American war in 1898, first in Cuba and afterwards in the Philippines, has offered to fit out a nursing staff for service with the Japanese army. The Japanese Minister in Washington has accepted the offer on behalf of his Government and Dr. McGee will leave in the early part of March with several nurses to establish a field hospital in Japan. There are to be formed committees of women in different parts of the country to raise funds for the support of the nurses. More nurses will follow if the subscriptions are large enough to cover expenses.

Typhoid Fever and Diphtheria at the University of Minnesota.

It is reported from Minneapolis, Minnesota, that somewhat severe epidemics of diphtheria and typhoid fever exist at the State University of Minnesota which will probably close for the balance of the year. President Northrup has publicly warned the students against the city water. A further outbreak of typhoid fever is feared. A faculty health committee has been appointed to fight the contagion.

Consolidation of the Medical Society of the State of New York and the New York Branch of the American Medical Association.

The consolidation of the two medical organisations of New York State is, at the time of writing, practically an accomplished fact. For many years there have been more or less serious differences between these two bodies, but at length the hatchet has been buried and a satisfactory agreement has been reached. This result has been mainly due to the efforts of the American Medical Association, the chairman of its committee on organisation having appealed to the medical profession of New York State to endeavour to bring the two organisations to an agreement. The question upon which the societies were divided was one of ethics, the Medical Society of the State of New York making a stand against

professional sectarianism and declaring against ethical differences of opinion among legally licensed practitioners of other schools. At the annual meeting of the Medical Society of the State of New York, held in Albany on Jan. 26th, the following motions were unanimously adopted:—

Resolved, that the report of the joint committee of conference be accepted and that the proposed agreement for the consolidation of the Medical Society of the State of New York and the New York State Medical Association be and the same is hereby approved, and the president of the society is hereby authorised and directed to execute the same in the name and behalf of the society, and the secretary is hereby authorised and directed to affix the corporate seal thereto; and be it further resolved that the committee of the society heretofore appointed for the purpose of bringing about the consolidation—namely, Dr. Henry L. Elsner, Dr. A. Jacobi, Dr. A. Vanderveer, Dr. George Ryerson Fowler, and Dr. Frank Van Fleet—be and they are hereby continued as such committee with full power and authority to do whatever may be necessary to carry the agreement into effect.

Action on the adoption of the report of the joint committee of conference, together with the proposal of motions ratifying the action of the State society, will be taken at the stated meeting of the Medical Society of the State of New York to be held on Monday, Feb. 29th.

Tenement Children and Tuberculosis.

At a recent meeting of the Association for Improving the Condition of the Poor an appropriation of $15,000 (£3000) was made for the maintenance at the seaside of 50 New York tenement children suffering from non-pulmonary forms of tuberculosis. The association wishes to educate the general public to a knowledge of the fact that a large percentage of children known merely as cripples are suffering from tuberculosis and can be cured. Dr. Hermann Biggs of the New York Health Department declares that there are in the New York tenements alone from 3000 to 4000 children under 15 years of age suffering from scrofula and tuberculosis of the bones, the joints, and the lymphatic glands. It is, of course, a well-known fact that tuberculosis of the lungs affects but a relatively small number of children under 15 years of age.

Surgeon wanted on the Panama Commission.

The committee on medical legislation of the American Medical Association has requested President Roosevelt to appoint on the Panama Canal Commission a member of the medical profession and has suggested that Colonel William C. Gorgas is well qualified for the position. Colonel Gorgas is a surgeon in the army and is widely known for his researches in Cuba into the causes of yellow fever. The fact is urged that—

Under both the French administrations at the Isthmus the engineering problems themselves, to the chagrin of the medical profession of the world, failed of accomplishment largely through the frightful mortality among officers and labourers consequent upon lack of authority on the part of medical officers intrusted with the work of sanitation; that the same conditions of insalubrity exist now that existed then and that consequently the sanitary problems are to be recognised as second in importance, if second at all, only to those connected with the engineering department.

New York Eye and Ear Infirmary.

The board of directors of the New York Eye and Ear Infirmary has decided to curtail the scope of the work of that institution after May 1st in the event of sufficient funds for its maintenance not being collected. Even after March 1st no patients will be received in the part of the hospital known as Platt Pavilion in which contagious diseases of the eye are treated. The closing of this wing of the hospital would be a misfortune for many infants living in the very poor districts of the east side. The infirmary has been in existence for 86 years and is considered to be the foremost institution of its kind in the United States.

Feb. 27th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Quarantine against Small-pox.

IN consequence of an outbreak of small-pox in Christchurch, New Zealand, the various boards of health in Australia have declared New Zealand to be infected and all vessels from New Zealand ports will be quarantined and no passengers allowed to land for 15 days unless successfully vaccinated within the last two years or until *pratique* is granted by the health authorities. The necessity of placing quarantine regulations under Federal control as speedily as possible is again made manifest by the different methods adopted by the several States in this instance. The first vessel to arrive from New Zealand at Australian ports after notification of the outbreak was the *Moeraki* at Hobart. She was allowed to berth and to unship and to ship cargo but all passengers were prohibited from landing. The Tasmanian passengers were therefore taken on to Melbourne, the next port of call. On arrival at Port Phillip Heads the *Moeraki* was boarded by two medical officers of the Board of Health. The passengers were examined and it was found that all who had come from Christchurch or had passed through that city during the time of the outbreak of small-pox had been successfully vaccinated within the last two years. The names and addresses of all the passengers were taken and on their giving assurances to report to the Board of Health in case of illness they were allowed to land. The 50 passengers for Hobart can now return there by way of Launceston. The Board of Health of New South Wales is quarantining passengers from Christchurch only. In Queensland a proclamation has been issued ordering that all vessels from New Zealand shall be quarantined until granted *pratique* by the health authorities. Some uniformity of action is obviously necessary.

Bubonic Plague.

Some time ago the Government of West Australia commissioned Dr. Anderson to visit India and to inquire into the occurrence and treatment of bubonic plague. Dr. Anderson has sent in a report in which he states that plague is not in a great majority of cases a contagious disease as ordinarily understood and that the discovery of a case in a general hospital need not necessitate the quarantine of the whole institution. A case of supposed bubonic plague was discovered in a coloured seaman on board a steamer at Williamstown, Melbourne. The steamer was placed in quarantine pending inquiries, the result of which was that the case was not plague.

Tuberculosis.

The Victorian Year-book for 1902, which has just made its belated appearance, includes a contribution by Dr. D. Astley Gresswell, chairman of the Board of Public Health, entitled "The Presence of Tuberculosis in Victoria." He mentions that from 1863 to 1887 the death-rate from phthisis and other tuberculous diseases remained fairly constant. In the triennial period commencing at the latter year the average yearly rate per 100,000 inhabitants for the metropolitan districts was 283 and for the extra-metropolitan 119. A steady improvement then set in and during the triennial period 1899–1901 in the metropolitan districts the average yearly deaths from phthisis were 144 per 100,000 and those from other tuberculous diseases were 42 per 100,000. Some few months ago, as mentioned at the time, the Board of Health of Victoria made tuberculosis a notifiable disease under the provisions of the Health Act. This procedure has been much opposed by many members of the medical profession. In his annual report to the Board of Health, Dr. Wilkinson, health officer of Preston, referred to the subject and observed that from a long experience in an isolated district with a settled population he was satisfied of the small risk of contagion and had never seen a case of its occurrence, although for over 20 years he had watched the other members of households where one had been attacked with tubercle. On the other hand, the reporting and segregating of such cases would have inflicted great hardship. Dr. D. Turner, who as examining medical officer to the sanatorium for consumptives in Victoria has had exceptional opportunities for observation, has forcibly expressed his dissent from the action of the Board of Health. He records numerous instances of the hardship inflicted by the opinions now promulgated as to the contagiousness of tubercle—opinions which his experience shows to be exaggerated greatly. The plans for the new "Kronheimer" wing for consumptives at the Austin Hospital have been approved. The building will accommodate 30 beds on each floor, making the total number for consumptives 102. The new wing will not be utilised, however, until the question of its maintenance has been settled. Like the infectious diseases hospital the building will lie idle unless the Government comes to the assistance of the committee which at present it absolutely declines to do.

Preservatives in Food.

As previously stated in this column[1] the manager of a

[1] THE LANCET, Feb. 27th, 1904, p. 618.

concentrated milk company in Sydney was charged with an offence against the regulations of the Board of Health in selling milk containing boric acid in a proportion exceeding $\frac{1}{10}$th of a grain per pint. The defendant contended that the case should be dismissed on the ground that the regulation was invalid, because unreasonable, and that the provision made did not "regulate" as required by the Health Act but for practical purposes prohibited the use of boric acid as a preservative. The magistrate decided that the regulation was not unreasonable, convicted the defendant, and fined him in the sum of £2, in default seven days' imprisonment with hard labour.

Infantile Mortality.

The Victorian Year-book gives some figures respecting infantile mortality in Australia. The average deaths under one year of age to 100 births for the period 1891-1901 is: Western Australia, 14·5; New South Wales, 11·2; Victoria, 11·1; South Australia, 10·5; Queensland, 10·3; and Tasmania, 9·6. Figures have been published showing the percentage of children who died before reaching the age of 12 months in Victoria during a series of years. From 1866 to 1902 the two highest percentages were 12·91 during the period 1866-70 and 13·41 in 1898, while the two lowest were 10·23 in 1895 and 9·53 in 1900.

Medical Society of Victoria.

The annual meeting of the Medical Society of Victoria was held on Jan. 13th. The report stated that there were 290 members and that 23 new members had been elected during the year. The average attendance at meetings was 36. The following officers were elected for the year 1904:—President: Dr. G. T. Howard. Vice-Presidents: Mr. M. U. O'Sullivan and Dr. A. J. Wood. Treasurer: Dr. C. H. Mollison. Secretary: Dr. L. J. Balfour. Librarians: Mr. A. W. F. Noyes and Dr. H. D. Stephens. Committee: Dr. P. Bennie, Dr. W. Boyd, Dr. Buchanan, Dr. Gault, Dr. Lawrence, Dr. Moore, Mr. F. W. W. Morton, Mr. R. Hamilton Russell, Mr. W. Beattie Smith, and Dr. R. R. Stawell. The retiring president, Mr. Russell, read the annual address, taking a somewhat unusual course by dealing with the special subject of the Congenital Origin of Hernia, a subject which he has discussed on several occasions during the last five years.[1]

Hospital Affairs.

The sixteenth annual report of the Royal North Shore Hospital, Sydney, stated that the first portion of the new hospital had been opened and that the institution had remained practically full ever since. During the 12 months there were 153 patients treated in the old hospital, of whom 120 were discharged cured and nine died, while nine were removed to the new building. In the new hospital 340 patients had been treated, of whom 239 were discharged cured, and 30 died, leaving 42 under treatment at the end of the year. The average daily number resident in the old hospital was 21·65 and in the new 39. The total number of deaths (of which eight occurred within 24 hours of admission) was 39, being 8·05 per cent.—The annual report of the Balmain Hospital stated that the number of patients treated in the institution last year had been 339 in the indoor department and 2395 in the outdoor, as against 341 and 2193 respectively for 1902. The mortality on the year's cases had been 5·8 per cent.—By the will of the late Mr. Felton, senior partner in the firm of Felton, Grimwade and Co., wholesale druggists, Melbourne, the hospitals of Melbourne will be very largely benefited. He left between £400,000 and £450,000 to be invested by trustees and half the income is to be devoted to charities and half to the purchase of works of art "calculated to raise or improve the public taste." With regard to the bequest for the charities the testator said:

> Without in any way fettering the discretion of the trustees, I hereby indicate to them my hope that in the application of such income they will favourably consider, firstly, charities for children. For example, children's hospitals and orphanages; secondly, charities for women, such as women's hospitals; thirdly, such institutions or societies as general hospitals, societies for the relief of the educated poor, and other charitable institutions of a general character.

Some time ago the medical staff of the Melbourne Hospital questioned the legal right of the committee of management to appoint specialists, claiming that under the Hospital Act all patients were to be placed under the physicians and surgeons who were to be elected by the subscribers. The specialists already appointed by the committee are dermatologist, ophthalmologist, aurist, skiagraphist, medical electricians, and anæsthetists. The committee has now obtained counsel's opinion on the subject which is that the committee has not the right to appoint specialists.

New Border Medical Association.

A conference of medical practitioners from Albury, Corowa, Wodonga, Ruthergien, Chiltern, and Wangarratta was recently held, when it was decided to form a "Border Medical Association." Dr. Andrews was elected President, Dr. C. F. Harkin Vice-President, and Dr. Lang secretary. Chiltern was selected as the meeting place. It is proposed later to affiliate the association with the New South Wales branch of the British Medical Association.

Appointments.

Dr. C. W. Reid, senior medical officer of the Department of Lunacy, at present acting as port health officer at Sydney, and visiting medical officer to the Shaftesbury Reformatory, has been appointed port health officer of Sydney in the place of Dr. William Peirce who has retired.—Dr. Charles MacLaurin has been appointed a member of the Police Medical Board, New South Wales, in the room of Sir H. Normand MacLaurin, M.L.C.

A Brave Medical Man.

At a recent serious fire at the Wallaroo Miner, South Australia, heroic work was performed by Dr. H. R. Letcher. Finding that the lives of the men underground were endangered through want of medical aid Dr. Letcher went down and worked in the poisonous air for hours until he was utterly exhausted.

Obituary.

Dr. J. G. Carstairs, one of the oldest practitioners of Geelong, Victoria, died on Jan. 13th. Dr Carstairs was a son of the late Surgeon W. Carstairs of the East India Company's service and was born at Poonah, in the Bombay Presidency, India, on June 28th, 1829. He studied medicine at the University of Edinburgh where he graduated as M.D. in 1850. He commenced practice in Moorabool-street, Geelong, in February, 1854, and soon acquired a large practice. He was universally respected and was especially good to the poor. For many years he was health officer of the city and took a great interest in epidemiological questions, contributing many papers to the local medical societies on influenza, measles, and like subjects, the occurrences of which he believed were influenced by the amount of ozone in the atmosphere.

Feb. 2nd.

[1] Mr. Russell's address is published in full on p. 707 of our present issue.—ED. L.

Obituary.

ALEXANDER DAVIDSON, M.A., M.D. EDIN., F.R.C.P. LOND.,

CONSULTING PHYSICIAN TO THE LIVERPOOL ROYAL INFIRMARY.

IT is with much regret that we have to record the death of Dr. Alexander Davidson, at the age of 66 years, which event took place on March 3rd at his residence at 2, Gambier-terrace, Liverpool. He had been in failing health for some time and in October of last year was confined to his room. He recovered sufficiently to enable him to resume a part of his professional work but apparently the exertion was more than he was able to endure as a serious relapse occurred about four weeks ago from which he never rallied. Dr. Davidson was born in Edinburgh in 1838, being the son of the late Rev. Dr. Davidson of that city. He graduated as Bachelor of Medicine at the University of Edinburgh in 1863 and as Doctor of Medicine in 1872. He was elected a Fellow of the Royal College of Physicians of London in 1885, having been admitted to its Membership in 1874. He was formerly assistant physician to the Liverpool Infirmary for Children and honorary physician to the Liverpool Northern Hospital and in 1876 was appointed honorary physician to the Liverpool Royal Infirmary, from which post he retired in the spring of 1897 and was then appointed consulting physician. He took a leading part in the reconstruction of the old Liverpool Royal Infirmary School of Medicine which in 1881 became the medical faculty of University College, Liverpool, and is now the medical faculty

of the University of Liverpool. He was the first lecturer on pathology and when the old school of medicine was merged into University College he was promoted to the rank of professor. Upon resigning that post some years ago he was honoured with the title of emeritus professor and within the last few months was elected to a seat on the medical faculty of the University of Liverpool *honoris causâ*. His clinical teaching was highly valued for its thoroughness by the students of the Royal Infirmary and great confidence was placed in his judgment by his professional brethren. His reputation as a physician was not confined to Liverpool but extended to the surrounding districts and North Wales. During his term of office at the Royal Infirmary, which occupied nearly 21 years, his advice and guidance in matters affecting the general interests of the hospital were eagerly sought by the chairman and members of the managing committee, his singleness of purpose and his integrity of character being so fully acknowledged. He also gave valuable assistance to the building committee of the new Royal Infirmary in matters connected with its sanitary and other requirements. At one time Dr. Davidson took a large interest in the Lancashire and Cheshire branch of the British Medical Association, of which he had been honorary secretary and president. He also took a great interest in the nurses' home and training school for nurses in connexion with the Royal Infirmary and in the Queen Victoria District Nursing Association. He was always ready to attend the sick nurses and by them he will be sadly missed. Some few years ago he was offered the presidentship of the Liverpool Medical Institution but he declined the honour for reasons of health. The profession of Liverpool esteemed him as a model of uprightness and single dealing and his example will not soon be forgotten by his numerous friends and former students. He leaves a widow and a son who is an undergraduate at Trinity College, Oxford.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. A. Gross, *privat docent* of internal medicine in the University of Kiel.—Dr. Magnus Blix, professor of physiology in the University of Lund, at the age of 55 years. He graduated in Upsala and was for some years assistant to the professor of medical physics there. He published numerous papers on the Physiology of Muscles and especially on that of flight in birds.—Dr. Hermann Emminghaus, formerly professor of mental diseases in the University of Freiburg. He was born in Weimar in 1845 and studied in Göttingen, Jena, Vienna, and Leipsic. He was *privat-docent* in Würzburg and professor in Dorpat (Iurieff) before being offered the chair in Freiburg in 1886. He wrote various monographs on Mental Diseases and the portion of Penzoldt and Stuntzing's "Handbook of Therapeutics" dealing with these.

Medical News.

UNIVERSITY OF CAMBRIDGE.—Dr. J. G. Adami and Professor H. T. Bovey, F.R.S., of Montreal will represent the University at the jubilee festivities of the University of Wisconsin to be celebrated in June next.—At the Congregation held on March 5th medical degrees were conferred as follows:—

Doctors of Medicine.—S. H. A. Lambert, St. John's; and W. M. Willoughby, Gonville and Caius.
Bachelor of Medicine and Bachelor of Surgery.—G. S. Haynes, King's.
Bachelors of Medicine.—H. S. Drew and C. M. Murray, Pembroke; and P. Hardy, Trinity Hall.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Emil Villinger has been recognised as *privat-docent* of Neurology and Neuro-pathology.—*Berlin:* Dr. Heinrich Hanke has been recognised as *privat-docent* of Otology.—*Bonn:* Dr. Karl Reifferscheid has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Bordeaux:* Dr. Verger and Dr. Abadie have been appointed, after *concours*, *agrégés* of Medicine.—*Copenhagen:* Dr. Oskar Bloch has been transferred from the chair of Clinical Surgery to that of Operative Surgery. Dr. Thorkild Rovsing has been appointed to the chair thus vacated.—*Florence:* Dr. Giuseppe Levi has been recognised as *privat docent* of Anatomy.—*Halle:* Dr. Siegert of Strasburg has been offered the Extraordinary Professorship of Children's Diseases vacant through the death of Dr. Pott. Dr. Alfred Hoche of Freiburg has been offered the chair of Psychiatry vacated by Dr. Ziehen who goes to Berlin but he has declined it.—*Heidelberg:* Dr. Karl Bonhöffer of Königsberg has been appointed to the chair of Psychiatry.—*Iurieff (Dorpat):* Dr. Druzhinin has been allowed to retire from the chair of Surgery on account of the infirm state of his health. Dr. Rostoff-teff has been appointed Extraordinary Professor of Operative Surgery.—*Lille:* Dr. Verdun has been appointed Professor of Medical Zoology and Pharmacy; Dr. Fockeu, Professor of Materia Medica and Botany; and Dr. Ingleran, after *concours*, *agrégé* of Medicine.—*Lemberg:* Dr. Anton Jurasz of Heidelberg has been offered the newly created Professorship of Ear and Throat Diseases.—*Lyons:* Dr. Nicolas and Dr. Charvet have been appointed *agrégés* of Medicine.—*Montpellier:* Dr. Ardin-Delteil has been appointed, after *concours*, *agrégé* of Medicine.—*Nancy:* Dr. Richon and Dr. Hoche have been appointed, after *concours*, *agrégés* of Medicine.—*Naples:* Dr. Francesco Vigorita has been recognised as *privat docent* of Materia Medica and Experimental Pharmacology.—*Paris:* Dr. P. Carnot, Dr. Claude, Dr. Balthazard, Dr. E. M. Labbé, and Dr. Macaigne have been appointed, after *concours*, *agrégés* of Medicine.—*Pisa:* Dr. Luigi Adolfo Oliver has been recognised as *privat docent* of Midwifery and Gynæcology.

THE IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.—The festival dinner of this association will take place at the Trocadéro Restaurant, Piccadilly-circus, London, W., on St. Patrick's Day, March 17th, at 7.15 P.M. Tickets may be obtained by members from Mr. E. Canny Ryall, 30, Harley-street, W.

COTTAGES *v.* TENEMENTS.—The sanitary committee of the city council of Manchester is engaged in a perpetual warfare against overcrowding and insanitary dwellings. One of the chief difficulties is to make provision for those displaced by the closing of the latter, an instance of which was given by one of the aldermen at the meeting of the council on March 2nd. Sometimes land cannot be obtained where it is most wanted and however unsavoury the locality may be those accustomed to live in it seem unwilling to go elsewhere. Large sums have been spent by the corporation in tenement dwellings, large buildings of several storeys with various conveniences as to water-supply, &c., but they are not very popular. The architect has to make his plans so as to utilise every inch of space and the result is a collection of tenements, one storey above the other, like the combs in a wasps' nest, and partaking more or less of the doll's-house character. The sanitary committee recommended at the same meeting the erection of 16 cottages and 144 tenements in three storeys in Bradford-road, but an amendment was moved in favour of occupying the whole of the site with cottages. This would reduce the accommodation for tenants from 533 persons to 328 and one gentleman said there would be an annual loss of at least £200. The "barrack" dwellings are not popular; people do not like the want of privacy or the noise of "children clattering over their heads," and one speaker said that the woes of the tenement dweller were described in a song with the refrain, "I live underneath." There can be no question that it is better to distribute people over a wide area than to put more on an acre by piling storey on storey, but unfortunately it is more costly. How far this may be recouped by the better health of those living in the cottages is an interesting question. However this may be, the amendment was carried.

ROYAL DENTAL HOSPITAL.—The annual general meeting of governors was held at the hospital on March 10th, Mr. Richard Winch, Vice President of the institution, being in the chair. The committee of management reported a total of 97,830 cases receiving attention during the year, being 8495 more than in 1902. Anæsthetics were given in 35,619 of the cases, 3998 more than in the previous year. Two paid house anæsthetists have been appointed in addition to the honorary staff, while the increase of work, although gratifying to the committee and staff, brings with it additional responsibilities, and they earnestly appeal for greater support from the public to enable them to carry on the work of the hospital satisfactorily and at the same time to pay the yearly sum of £3000 for interest and part repayment of loan for building the new hospital. A legacy of £300 has been received from the executors of the late Mr. Richard Bishop and has been used towards the reduction of the debt. In answer to the appeal made last year to pay for the new operating chairs £962 2*s.* 6*d.* have been received, leaving

£414 13s. still owing. Donors of chairs (15 guineas each) become life governors of the hospital and are entitled to the usual privileges and to have their names affixed to the chairs presented. New annual subscriptions and donations will be gratefully received by the bankers, Messrs. Barclay and Co., 1, Pall Mall East, S.W., by the treasurer, Mr. F. A. Bevan, and by the secretary, Mr. J. F. Pink, at the hospital.

CHILDREN'S COUNTRY HOLIDAY FUND.—CHANGE OF TREASURER.—The Earl of Arran has consented to be treasurer of the Children's Country Holiday Fund, a post which the Right Honourable Alfred Lyttelton felt obliged to resign on accepting office as Secretary of State for the Colonies.

PROVINCIAL HOSPITAL, PORT ELIZABETH.—The forty-eighth annual report of the Provincial Hospital, Port Elizabeth, South Africa, dealing with the events of the year ended Dec. 31st, 1903, shows that during that time 1640 in-patients were treated, as compared with 1670 in 1902. Of this number 996 were Europeans and 644 were coloured persons and natives. There were 182 deaths—namely, 72 of Europeans and 110 of coloured persons; 106 patients remained under treatment at the end of the year. There were 8991 attendances of out-patients. The following are a few of the principal diseases for which patients were admitted: enteric fever, 99 cases, with 21 deaths; phthisis, 73 cases, with 49 deaths; venereal disease, 63 cases, with one death; alcoholism, 124 cases, with 12 deaths; and 421 cases the result of violence (including fractures), with 12 deaths.

UNIVERSITY OF LIVERPOOL: FACULTY OF MEDICINE.—A diploma in veterinary hygiene has been instituted to provide training and recognition of such training, for veterinary surgeons upon parallel lines to that required for the diploma in public health so that veterinarians may adequately coöperate with public health officers in the carrying out of hygienic reform. The diploma is to be granted only to qualified veterinary practitioners after a thorough course of practical training in the university veterinary school in the subjects of veterinary hygiene, comparative pathology and bacteriology, parasitology, veterinary toxicology and jurisprudence, sanitary law, administration, and reporting. An advertisement of the diploma and the conditions under which it is granted appears in our present issue. The regulations for the recently established diploma in tropical medicine of the University of Liverpool only permit the granting of the diploma to men taught in the university school, that is, only to those for whose thorough training the university can be answerable. Particulars with regard to the diploma and the regulations for it will be found in our advertisement columns.

NEW HOSPITAL FOR WOMEN, EUSTON-ROAD, N.W.—The annual meeting of the subscribers to this hospital was held on March 8th, Adeline, Duchess of Bedford, presiding. During the last year 612 in-patients had been treated and the number of new out-patients had been 7629. There were 7879 out-patients who renewed their letters and the total attendances during the year amounted to 35,122. The receipts for the year, apart from legacies, &c., amounted to £5758. The expenditure account showed an adverse balance of £35 and, in addition, the unpaid bills amounted to £354. Only 52 beds were available and the pressure on the out-patient department called for further accommodation. A special small ward for minor operations was also needed. Sir William H. Broadbent said that the hospital was doing excellent work. It was not only a hospital for women but it was also a valuable training ground for students. The committee announced with deep regret the retirement of Mrs. E. Garrett Anderson, M.D., from the committee of management of the hospital and her work was highly commended. She would, however, remain on the consulting staff. Her place on the committee will be taken by Mrs. M. A. D. Scharlieb, M.D.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Nurses and Private Nursing Homes Bill.

THE Bill to provide for the better training and registration of nurses and for the voluntary registration of private nursing homes, to which reference was made in a previous issue of THE LANCET, has now been presented. Its nominal promoter, the Hon. Claude Hay, has obtained the support of Mr. Bignold, Mr. H. D. Greene, Major Bagot, Lord Cecil Manners, and Mr. Ian Malcolm.

Opposition to the Pharmacy Bill.

Mr. Harwood has given notice of his intention to move the rejection of the Pharmacy Bill, the leading provisions of which were explained in a note last week. It is understood that the point upon which most controversy is likely to arise is the clause which seeks to make it obligatory that the directors of companies which sell patent medicines should be qualified chemists. This is described by Mr. Harwood and others as an effort to make the selling of drugs "a close corporation"—in other words, to force the trade in patent medicines into the hands of the druggists.

The Medical Members of Parliament.

A meeting of Members of Parliament who are also members of the medical profession was held at the House of Commons on Tuesday last. Dr. Farquharson presided and among those present were Sir Michael Foster, Sir John Batty Tuke, and Dr. C. F. Hutchinson. It has been felt by medical Members of the House that when the medical side of public questions comes up for discussion good service could be done by concerted action on their part and a committee has now been formed with that object in view. Sir Michael Foster has agreed to act as honorary secretary of the committee.

HOUSE OF COMMONS.

THURSDAY, MARCH 3RD.

Accidental Suffocation of Infants.

Captain NORTON asked the Home Secretary whether he could furnish a return for the last five years of the number of infants accidentally suffocated in bed with the proportion of such deaths in London, Liverpool, and Manchester and with the number of cases that occur in December and January compared with any other two months.—Mr. AKERS-DOUGLAS, in reply, said: I scarcely think that this is a matter for a return. Perhaps it will serve the hon. Member's purpose equally well if I give him such statistics as are available. I will send him the details for the towns which he mentions and will merely state now the totals for England and Wales—viz., in 1898, 1458 children were accidentally suffocated in bed; in 1899, 1621; in 1900, 1619; in 1901, 1434; and in 1902, 1490. There are no statistics available as to the number of cases occurring each month. I understand that the matter will be dealt with in the forthcoming volume of criminal statistics for 1902.

A Galway Hospital Case.

Mr. DUFFY asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been directed to the circumstances leading to the death of a farmer named John Holland of Park, Athenry, county Galway, on March 11th, from the effects of a bullet wound received on the night of Jan. 1st, and to the fact that at the inquest held the jury condemned the governing body of the Galway Hospital and held that this young man lost his life through their action in refusing him admission to that institution; and if so whether, in view of the Act of Parliament passed in 1896, creating this institution a public hospital for the county of Galway and of the liability the upkeep of the hospital imposes on the ratepayers of the county, he would cause a sworn inquiry to be held into the circumstances leading up to the death of this young man and consider the necessity for making some compensation to his family.—Mr. WYNDHAM answered as follows: The board of management of Galway Hospital will meet on Saturday next, I understand, to consider the circumstances of this case and I have caused the hon. Member's question to be referred to it for observation.

A Medical Question and a Matter of Degree.

Mr. SLOAN asked the Secretary for War whether a person wearing false teeth and suffering from varicose veins was eligible for enlistment in the army.—Mr. ARNOLD-FORSTER: This is purely a medical question and a matter of degree depending on the number of sound teeth and the extent of the varicose veins.

Nurses' Certificates.

Mr. MACVEAGH asked the Irish Chief Secretary whether the Local Government Board would sanction the appointment to workhouse infirmaries of nurses who held certificates from the Children's Hospital in Dublin.—Mr. WYNDHAM: The Children's Hospital in Temple-street is regarded by the Board to be competent to certify nurses as qualified within the meaning of Article 2 (b) of the Nursing Order, provided such nurse has received not less than three months' training in some recognised general hospital where adult patients are treated. The Board has not yet been asked to recognise the Children's Hospital in Harcourt-street as a training school for nurses.

MONDAY, MARCH 7TH.

Glycerinated Calf Lymph.

Mr. WEIR asked the Secretary for Scotland whether the proposal to establish a station in Scotland for the preparation of glycerinated calf lymph had yet been considered; and, if so, whether he would state the nature of the decision arrived at.—Mr. GRAHAM MURRAY replied: So long as the general arrangements now existing between England and Scotland remain as at present I see no necessity for adopting the course suggested by the hon. Member.

Inoculation against Enteric Fever.

Mr. EUGENE WASON asked the Secretary of State for War how many officers and men who died in South Africa from enteric fever had been inoculated against the disease and what was the purport of the reports of the Army Medical Corps as to the success or otherwise of the process.—Mr. ARNOLD-FORSTER answered as follows: The examination of the medical records of the South African war has involved enormous labour and is not sufficiently advanced to enable me to give the statistics asked for. The question of anti-enteric inoculation has been referred to a special committee. It is one of special interest and will on no account be neglected. If at a late

stage I can give the hon. Member the information he asks for I will do so.

Small-pox in Scotland.

Mr. JOSEPH DEVLIN asked the Secretary for Scotland whether his attention had been directed to the increase of small-pox in Greenock, whether he was aware that the hospital accommodation was insufficient and the buildings were overcrowded, whether patients were detained sufficiently long to avert danger of their spreading the disease after discharge, whether the reception house was well situated and sufficiently commodious for the proper isolation of all "contacts," and what steps he proposed to take to insure the provision of adequate hospital and reception-house accommodation by the local authority.—Mr. GRAHAM MURRAY replied: The hospital accommodation for small-pox in Greenock has been extended from time to time during the progress of the epidemic and steps are being taken for the erection of another additional pavilion. The circumstances attending the occurrence of every case are reported to the Board and there is nothing in these reports to suggest that patients are prematurely discharged. The existing reception house is suitable for the purpose but has not been equal to the demands arising from the epidemic. The Board has called upon the local authority to provide additional accommodation. It understands that great difficulty is experienced in acquiring proper premises.

Whisky Blending.

Mr. BLACK asked the Secretary to the Board of Trade whether he was aware that revenue officials, with the knowledge that a false description was taking place, did not prevent grain and foreign spirits being mixed with malt whisky and labeled as pure malt whisky in warehouses under Government supervision, and, if so, whether he would state what steps he proposed to take in the matter.—The CHANCELLOR of the EXCHEQUER replied: There are many reasons which make it undesirable to employ revenue officials in an attempt to regulate the trade descriptions that are placed upon goods in bond, the strongest of all being that any such regulation would be perfectly futile, as it would only result in postponing the application of descriptions until after the goods had passed out of bond and would afford no real protection to the public.

Portsmouth Lunatic Asylum Case.

Sir ALBERT ROLLIT asked the President of the Local Government Board whether he would state what steps would be taken to carry into effect the rider of the jury in the case of the inquest held on Feb. 25th upon the four female patients in Portsmouth Lunatic Asylum who died from the effects of careless dispensing, and whether the Local Government Board would cause regulations to be made requiring all dispensaries in public institutions to be in charge of persons registered under the Pharmacy Acts.—Mr. AKERS-DOUGLAS, who answered, said: There are several difficult points involved in this case and for the present I can only say that I am in communication with the Commissioners in Lunacy and that the matter shall be thoroughly considered.

TUESDAY, MARCH 8TH.

Royal Commission on Tuberculosis.

Mr. BATTY LANGLEY asked the President of the Local Government Board when the report of the Royal Commission on Tuberculosis would be available for members.—Mr. GRANT LAWSON replied: I understand that considerable progress has been made by the Royal Commission with its investigation but that the necessity for making the report as far as possible conclusive involves a very wide series of experiments. These experiments are being carried out on an extensive scale by the Commission and I am informed that it is impossible to state at present when the report will be issued.

In Praise of the Army Medical Department.

In the course of the general discussion on the Army Estimates Dr. FARQUHARSON made a reference to the condition of the Army Medical Department. He thought the House would learn with satisfaction that the department was now in an excellent state. Before the new regulations were introduced an examination was announced for which not a single candidate came forward, but he was informed that at the last examination there were nearly three times as many candidates as there were appointments to give away. It was equally gratifying that the men were all of the highest class and of great distinction in their education. Not only that, but one or two of the examiners for promotion had stated that they had hardly ever known examination papers written with such ability. The army medical officers now got excellent pay and also "study leave" which would enable them to rub off the rust of foreign service by going to the centres of medical education and learning what had been happening in the civil world of medicine and surgery. There was only one word of warning. The arrangement of the department was excellent as it stood but he earnestly hoped that no attempt would be made to interfere with its success by the imposition of restrictions or by any other unnecessary interferences.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, 19, Rue Hautefeuille, Paris.

Les Intoxications. Par P. Brouardel, Doyen Honoraire et Professeur de Médecine Légale de la Faculté de Médecine de l'Université de Paris. Price Fr.12.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, W.C.

Diseases of the Gall-bladder and Bile-ducts, including Gall-stones. By A. W. Mayo Robson, F.R.C.S., Hunterian Professor of Surgery and Pathology, 1897, 1899, and 1903, and Vice-President, Royal College of Surgeons of England, 1902; assisted by J. F. Dobson, M.S. Lond., F.R.C.S., lately Resident Surgeon to the General Infirmary at Leeds. Third edition. Price 15s. net.

Lectures, Chiefly Clinical and Practical, on Diseases of the Lungs and the Heart. By James Alexander Lindsay, M.D., F.R.C.P. Lond., M.A., Professor of Medicine, Queen's College, Belfast. Price 9s. net.

BRYCE, WILLIAM, 54 and 54A, Lothian-street, Edinburgh.

Materia Medica and Therapeutics. Answers to Professional Examination Questions set at Edinburgh University. With a Complete Table of the Important Doses. Price 1s. net.

DEPARTMENT OF PUBLIC HEALTH AND CHARITIES, 395, City Hall, Philadelphia, U.S.A.

Philadelphia Hospital Reports, Vol. V. Price not stated.

DORNAN, WILLIAM, J., Philadelphia.

Transactions of the American Surgical Association. Volume the twenty-first. Edited by Richard H. Harte, M.D., Recorder of the Association. Price not stated.

Transactions of the American Gynecological Society. Vol. XXVIII. For the year 1903. Price not stated.

DOUGLAS, WILLIAM, AND SONS, LIMITED, Putney, S.W.

Refrigeration in the Dairy. A Short Illustrated Treatise on the Application of Refrigerating Machinery to Modern Dairy Practice. By Loudon M. Douglas, A.M.I. Mech.E. Price 2s.

FISCHER, GUSTAV, Jena.

Die Neutrophilen Weissen Blutkörperchen bei Infektions-Krankheiten. Von Dr. Joseph Arneth, Privatdozent und I. Assistenzarzt der Medizinischen Klinik am Kgl. Juliushospitale zu Würzburg. Price M.10.

Klinisches Jahrbuch. Herausgegeben von Prof. Dr. Freih. v. Eiselsberg, Prof. Dr. Flügge, Prof. Dr. Freih. v. Mering, und Prof. Dr. Werth. Zwölfter Band. Erstes Heft. Price M.6.

Toxine und Antitoxine. Von Dr. phil. et med. Carl Oppenheimer, Assistent am tierphys. Institute d. Landw. Hochschule, Berlin. Price M.6.

Ueber Psychosen bei Militärgefangenen nebst Reformvorschlägen. Eine klinische Studie. Von Prof. Dr. Ernst Schultze, Oberarzt der Provinzial-Heil- und Pflege-Anstalt in Bonn. Price M.6.

FLAMMARION, ERNEST, 26, Rue Racine, Paris.

Les Frontières de la Maladie. Maladies Latentes et Maladies Atténuées. Par Dr. J. Héricourt. Price Fr.3.50.

GRIFFIN, CHARLES, AND COMPANY, Limited, Exeter-street, Strand, W.C.

Physiology and Pathology of the Urine, with Methods for its Examination. By J. Dixon Mann, M.D., F.R.C.P., Physician to the Salford Royal Hospital; Professor of Forensic Medicine in the Victoria University of Manchester. Price 8s. 6d. net.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Sehproben-Tafeln. Mit besonderer Berücksichtigung des militärarztlichen Gebrauchs. Von Dr. Berthold Kern, Generalarzt und Subdirektor der Kaiser Wilhelms-Akademie für das militärärztliche Bildungswesen, und Dr. Reinhold Scholz, Oberstabsarzt und Regimentsarzt des Vorpommerschen Feldartillerie-Regiments No. 38. (With six sheets of test-types in cardboard case.) Price M.3.

J. B. LIPPINCOTT COMPANY, 5, Henrietta-street, Covent-garden, W.C.

Blood-pressure in Surgery. An Experimental and Clinical Research. The Cartwright Prize Essay for 1903. By George W. Crile, A.M., M.D., Professor of Clinical Surgery, Western Reserve Medical College. Price 15s. net.

Diseases of the Nervous System. By H. Oppenheim, M.D., Professor at the University of Berlin. Translated and edited by Edward E. Mayer, A.M., M.D., Pittsburg, Pa. Second American edition, revised and enlarged. Price 21s. net.

International Clinics. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, U.S.A., with Collaboration. Volume IV. Thirteenth Series, 1904. Price not stated.

LANE, JOHN, The Bodley Head, Vigo-street, W.

New Poems. By Ronald Campbell Macfie. Price 5s. net.

MACMILLAN AND CO., LIMITED, London.

The Eye: its Refraction and Diseases. By Edward E. Gibbons, M.D., Assistant Surgeon of the Presbyterian Eye, Ear, and Throat Hospital, Baltimore. Price 21s. net.

OFFICES OF "THE CHEMIST AND DRUGGIST," 42, Cannon-street, E.C.

Pharmaceutical Formulas. Being a Supplementary Volume comprising a Consolidation of the Medicine-stamp Acts (with Historical Notes), Formulas for Known, Admitted, and Approved Remedies, an Australian Hospitals Formulary, and Many Other Recipes. Vol. II. Price not stated.

OFFICES OF "THE MUNICIPAL JOURNAL," EDWARD LLOYD, LIMITED, Salisbury-square, E.C.

The Municipal Year Book of the United Kingdom for 1904. Edited by Robert Donald, Editor of "The Municipal Journal," and "The London Manual." Price 3s. 6d. net.

PENTLAND, YOUNG J., Edinburgh and London.

Manual of Operative Surgery. By H. J. Waring, M.S., M.B., B.Sc. Lond., F.R.C.S., Assistant Surgeon, Lecturer on Surgical Anatomy, and Demonstrator of Practical Surgery, St. Bartholomew's Hospital. Second edition. Price not stated.

REIMER, GEORG, W.35. Lützowstrasse, 107 8, Berlin.

Die Behandlung der Lungenschwindsucht durch Bekämpfung der Mischinfektion. Von Dr. A. Menzer, Stabsarzt in Halle a.S. Price M.3.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton-street, W.C.

Modern Nursing in Private Practice. By Sir William Bennett, K.C.V.O., F.R.C.S. (Reprinted from the *Hospital*, Jan. 16th and 23rd, 1904.) Price 6d. net.

SENN, NICHOLAS, Chicago.

Surgical Notes from Four Continents and the West Indies. By Nicholas Senn, M.D., Ph.D., LL.D., Head of the Department of Surgery, Rush Medical College, in affiliation with the University of Chicago. Price not stated.

SMITH, ELDER, AND CO., 15, Waterloo-place, S.W.

Saint Bartholomew's Hospital Reports. Edited by A. E. Garrod, M.D., and W. McAdam Eccles, M.S., F.R.C.S. Vol. XXXIX. Price to subscribers, 6s.; to non-subscribers, 8s. 6d.

STEINHEIL, G., 2, Rue Casimir-Delavigne, Paris.

Eléments de Pathologie et de Clinique Chirurgicales. Par le Dr. Léon Moynac (de Bayonne), Ancien Interne des Hôpitaux de Paris, Ancien Professeur Libre de Pathologie et de Clinique. Huitième édition. Three volumes. Price not stated.

La Rhinoplastie. Par Ch. Nélaton, Agrégé à la Faculté de Médecine, Chirurgien de l'Hôpital Saint-Louis, et L. Ombrédanne, Ancien Prosecteur de la Faculté, Chirurgien des Hôpitaux. (Traité de Médecine Opératoire et de Thérapeutique Chirurgicale, publié sous la Direction de Paul Berger, Professeur à la Faculté de Médecine, Chirurgien de l'Hôpital Beaujon, et Henri Hartmann, Professeur Agrégé à la Faculté, Chirurgien de l'Hôpital Lariboisière.) Price Fr.15.

Traité d'Hématologie. Par Fernand Bezançon, Professeur Agrégé à la Faculté de Médecine, Medecin des Hôpitaux, et Marcel Labbé, Chef de Laboratoire à la Faculté, Médecin des Hôpitaux. Price Fr.25.

TIPOGRAFIA COOPERATIVA SOCIALE, Via de'Barbieri, 6, Rome.

Relazione Medico-statistica delle Condizioni Sanitarie del R. Esercito nell'Anno 1901. Compilata dall'Ispettorato di Sanità Militare. (Ufficio Statistica.) Price not stated.

TURNER, G. GREY, 31, Oxford-street, Newcastle-on-Tyne.

Some Surgical Aspects of Appendicitis. By G. Grey Turner, M.S. Durh., F.R.C.S. Eng., &c. (Reprinted from the *Northumberland and Durham Medical Journal*). Price not stated.

VOSS, LEOPOLD, Hamburg and Leipzig.

Beiträge zur Augenheilkunde. In Gemeinschaft mit Prof. Dr E. Fuchs in Wien, Prof. Dr. O. Haab in Zürich, und Prof. Dr. A. Vossius in Giessen. Herausgegeben von Prof. Dr. R. Deutschmann in Hamburg. Heft 59. Weitere Mitteilungen über mein Heilverfahren bei Netzhautablösung. 2. Fortsetzung. Von Prof. R. Deutschmann in Hamburg. Price M.3.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BLAIR, CHARLES, M.D., F.R.C.S. Eng., has been appointed Ophthalmic Surgeon, Royal Hospital, Richmond, Surrey.

BOWER, E. DYKES, F.R.C.S. Edin., has been appointed Medical Referee under the Workmen's Compensation Act for the Newnham District of County Court Circuit No. 53.

BRISCOE, WILLIAM THOMAS, M.D., B.Ch. Dub., has been re-appointed Medical Officer of Health of Chippenham.

CROOKS, JAMES, M.D., C.M. Toronto, L.R.C.S. Edin., L.S.A., has been re-appointed Medical Officer of Health of the Chard Urban District.

DALBY, AUGUSTUS WILLIAM, L.R.C.P. & S. Edin., has been re-appointed Medical Officer of Health of the Frome (Somerset) Rural District.

DAWSON, GEORGE W., F.R.C.S.I., has been appointed Assistant Surgeon to St. John's Hospital for Diseases of the Skin, Leicester-square.

FEROST, ALBERT ERNEST, M.B., B.S. Melb., has been appointed *pro tem.* Acting Health Officer, Acting Medical Officer, Acting Visiting Surgeon of the Penal Establishment at Townsville, and Acting Medical Superintendent of the Quarantine Station at Magnetic Island, Queensland, Victoria.

HARE, FRANCIS WASHINGTON EVERARD, M.R.C.S., M.D. Durh., has been appointed Visiting Medical Officer to the Diamantina Hospital for Chronic Diseases, South Brisbane, Queensland, Australia.

LANGLEY, J. E., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

MCDONALD, JAMES EDWARD FANCOURT, M.B., B.S. Melb., has been appointed *pro tem.* Acting Visiting Surgeon to the Penal Establishment at St. Helena, Queensland, Australia.

MARKS, Hon. CHARLES FERDINAND, M.D. Dub., has been appointed *pro tem.* Acting Medical Officer, Acting Visiting Surgeon to the Lock Hospital and Acting Visiting Surgeon to the Prisons at Brisbane, Queensland, Australia.

OSBORNE, W. A., M.B., B.S. R.U.I., has been appointed Professor of Physiology at the University of Melbourne, Victoria, Australia.

PENNY, JOHN, D.Sc. Public Health, M.B. Edin., F.R.S.E., has been appointed Medical Officer to the Union Workhouse, No. 2 District, and Public Vaccinator for No. 2 District, Cockermouth.

SCOTT, H. J. H., M.R.C.S., J.P., has been appointed *pro tem.*, Deputy Licensing Magistrate of the Licensing Court for the Licensing District of Scone, New South Wales, Australia.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR DISTRICT ASYLUM.—Assistant Medical Officer, unmarried. Salary £120, with board, apartments, attendance, and washing.

BELFAST, QUEEN'S COLLEGE.—Riddel Demonstrator in Pathology and Bacteriology. Salary £150 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Senior and Junior House Surgeons (resident). Salaries £100 and £80 per annum and fees.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street.—House Surgeon. Salary at rate of £70 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—House Surgeon. Salary £75 per annum, with board and attendance.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, with rooms, fire, lights, &c.

BIRMINGHAM GENERAL HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with residence, board, and washing.

BRENTFORD UNION INFIRMARY, WORKHOUSE, AND SCHOOLS, Isleworth.—Medical Superintendent and Medical Officer. Salary £300 per annum, with residence, rations, washing, &c., and fees.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £120 per annum, with rooms and attendance.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Assistant House Surgeon. Salary £70, with board, residence, and washing. Also Eight Clinical Assistants.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's-buildings, Holborn-circus, E.C.—Honorary Physician.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale.—Resident Medical Officer for six months. Salary at rate of £50 a year, with board and washing.

KENT AND CANTERBURY HOSPITAL.—House Surgeon, unmarried. Salary £90 a year, with board and lodging.

LONDON FEVER HOSPITAL, Islington, N.—Assistant Resident Medical Officer. Salary £120 a year, with board and lodging.

LONDON HOSPITAL, Whitechapel, E.—Ophthalmic Surgeon.

LONDON LOCK HOSPITAL, Soho, W.C.—House Surgeon to the male hospital. Salary £80 per annum, with board, lodging, and washing.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon, all for six months. Salary of two former at rate of £40 a year; of two latter at rate of £20 a year.

MIDDLESEX HOSPITAL.—Third Pathological Assistant in the Cancer Research Laboratories. Salary £75.

PERTH, AUSTRALIA, LUNATIC ASYLUM.—Assistant Medical Officer. Salary £400 per annum, with £50 house allowance or quarters in lieu thereof.

ROYAL DENTAL HOSPITAL OF LONDON AND LONDON SCHOOL OF DENTAL SURGERY, Leicester-square, W.C.—Two Senior Demonstrators. Stipend £60, rising to £70. One Senior Demonstrator. Stipend £100, rising to £120. Two Junior Demonstrators. Stipend £100, rising to £120.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Anæsthetist (female).

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Assistant Anæsthetist. Honorarium of £25 a year.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT) Greenwich, S.E.—Junior Resident Medical Officer. Salary £40 per annum, with board, residence, and washing.

SCALEBOR PARK ASYLUM, Burley-in-Wharfedale.—Assistant Medical Officer. Salary £ 50, with rooms, board, &c.

SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with board, residence, and washing.

TORQUAY.—Medical Officer. Salary £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Honorarium of £25, with board and lodging.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon for six months. Honorarium at rate of £75 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

HACKNEY.—On March 5th, at High-street, Hythe, Kent, the wife of Clifford Hackney, M.R.C.S., of a son.

PRETSELL.—On Feb. 5th, at Annfield Plain, Durham, the wife of William Gardiner Pretsell, M.B., of a daughter.

ROWLAND.—On March 4th, at S. John-street, Lichfield, the wife of Frank Mortimer Rowland, B.A., M.D. Cantab., of a son.

DEATHS.

ALLDEN.—On the 28th February, at No. 32, West Allington, Bridport, Sidney James Allden, M.D., B.S., Mayor of Bridport; late Resident Medical Officer of Brompton Hospital aged 38.

HAYWARD.—On March 5th, at Cheltenham, Martinus Peter Hayward, M.R.C.S. Eng., eldest son of late J. Cooper Hayward, M.R.C.S. Eng.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"DR. HETHERINGTON, AMERICA."

WE have received the handbill of a person who trades under the above description. Hetherington evidently does not believe in the old Scottish proverb, "Hawks dinna pyke oot hawks e'en," for he says unkind things about other "American physicians" who are at the present day "advertising in British newspapers to treat all diseases by correspondence." In one point we agree with Hetherington when he says "that it is impossible to correctly form an opinion of diseases without seeing the patients," but nevertheless it is very easy to form a correct opinion of Hetherington without seeing him. His handbill is enough. In this cunningly worded document he informs the world that he is a doctor of medicine and dental surgery of the United States and is a qualified and registered dental surgeon of England. There is no such degree as doctor of medicine of the United States. With regard to Hetherington's dental qualification of England we have consulted the Dentists Register for 1903 and there is only one Hetherington therein whose qualification for being on the Register is that he was in practice before 1878. If this Hetherington and Dr. Hetherington of America be the same person we recommend the handbills to the notice of the General Medical Council. If they are not the same person we advise the Mr. Hetherington on the Register to disclaim any connexion with Dr. Hetherington of America. The latter gentleman has at least one element of success—he believes in himself, for we note that he describes himself as "the most skilful specialist in England or America for the speedy and pleasant cure of nervous, blood, and urinary diseases"—a modest estimate which reminds us of Gilbert's M. Pierre—

> "He was the bravest man in France;
> He said so—and he ought to know."

PROFITABLE POTATOES.

THE potato takes an important place among the foods furnished us by the vegetable kingdom and the prices which have recently been paid for specimens remind us of the excitement which prevailed in the seventeenth century when famous tulip bulbs were put up for sale. The *Profitable Farm and Garden*, a periodical the object of which is revealed by its title, on Feb. 27th devoted a special number entirely to the potato and its cultivation, a coloured plate of "Eldorado," the newest of the potatoes which have caused a sensation in the market gardening world, being issued as a supplement. When the disease-resisting "Northern Star" was placed upon the market, we learn from one of the articles in the special number, 10*s.* a pound was considered rather an exorbitant price to pay for the common tuber of our dinner tables, but so keen has been the demand for a tuber which would resist disease that £100 were willingly paid for 16 ounces of "Eldorado" when its merits became known. It is expected that should the present year's crop of this variety turn out well £3 *3s.* per pound will be asked for the tuber next winter. The special number contains many interesting articles upon potatoes, for example, "How to Propagate Potatoes," "Potato Pests," "The Best Potatoes," "How to Cook Potatoes," "Field Culture," "Potato Manures," "Culture in Germany," "Storing," and "Potato Implements." Is it not an astonishing thing that we nearly all of us eat potatoes every day and yet we do not see a well-cooked potato once a month? The publishers of the *Profitable Farm and Garden* are Messrs. Collingridge, 148-9, Aldersgate-street, London, and the price is 1*d.*

URETHRAL INJECTIONS OF CHLORIDE OF ZINC.

Surgeon writes:—Can any reader kindly say where *detailed* accounts of injuries to the urethral mucous tract caused by solutions of chloride of zinc may be found and the treatment of such injuries and the results, and also if any experiments have been made on the mucous membranes of the lower animals with solutions of chloride of zinc of *various* strengths and with what results?

THE PROPER FEE?

To the Editors of THE LANCET.

SIRS,—I have been asked to undertake the medical duties attached to a new convent home for the reception of epileptic children. The home is built to accommodate from 50 to 60 patients and when full the staff of nuns will bring the numbers up to about 80. I am distant about three miles and the house is *not* situated on the main road. It is proposed that I should make two regular visits a week—any visits beyond the bi-weekly ones to be paid for separately. Drugs and a qualified dispenser will be found. My object in writing is to ask if any of your readers will help me by suggesting what would be a fair *annual* payment for the regular visits and what sum should be charged for any extra visits that may be necessary. I may add that I am two or three miles nearer than any other practitioner and though the home is in my district it is quite out of my daily beat. Thanking you in anticipation,

I am, Sirs, yours faithfully,

March 5th, 1904. W. B.

A CIRCULAR TRAVEL TICKET FOR LONDON STUDENTS.

Actum writes to us as follows:—

> I am a student but with my examination a long way behind me. When I can spare the time I listen, for example, to lectures at the National Hospital in Queen-square, at University College, London, at the Brompton Hospital for Consumption, and at other places. There I see crowds of senior students, alert, intelligent men and women. Would it not save much of their time and some expense to have for one fee a circular travel ticket about London? He or she would get into omnibus, or train, or tram, or tube, without other ticket or payment. When King's College Hospital is moved south of the Thames, and when the combined science schools are established, there will be the more call for facility of communication. Very simple rules would suffice to prevent abuse.

We quite agree that such circular travel tickets would be a great boon to the students in question and to many others besides medical and scientific students. The possibility of their issue merely depends upon whether the many companies concerned can see any profit for themselves in such an undertaking. It seems to us that to allot out of the inclusive fare the proportion which should belong to the main railway, the district railway, the omnibus, and the tram when the travellers live in all parts of London and attend demonstrations in all other parts would be far from a simple matter.

COTTON FACTORY DANGERS.

AT the hearing of a charge against a firm of spinners at Ashton of having "unfenced middle scrolls on spinning mules" a sensation was caused by the appearance of four boys, each without a right arm. These boys, who had all lost the right arm through accidents in unfenced middle scrolls, had been brought by Mr. Crabtree, the inspector of factories, from Oldham, Shaw, and Ashton to convince the court of the danger of this unfenced machinery. He said the beam of the engine had no fence and the engineer passed round it six times a day, each time endangering his life. There were also other dangerous parts of the machinery unfenced. A fine of a few pounds was inflicted which would not be felt much by a wealthy firm. But though these cases show that there is still dangerous neglect in some instances things are better than in the manufacturing days gone by.

Mr. D. K. Chatterjee.—We thank our correspondent for his good wishes and commendations. The omissions he points out in regard to our analytical notices are only apparent, not real. The vegetable extract to which he refers contained, as was shown, 8·53 per cent. of nitrogen which multiplied by the factor for proteid gives 53·73 per cent. In the analysis of lentil flour, which is also referred to, the difference except for about 2 per cent. of fat may be taken to be carbohydrate. The statements about the food value of milk proteid are based upon the relative amount of proteid nitrogen in the dry substance as against that in meat with its complement of water.

Miss A. H.—We have forwarded the letter.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (16th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (17th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's

(2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (19th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (14th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Discussion on Acute Intestinal Obstruction—(1) Dr. H. White: Its Early Diagnosis; (2) Mr. A. E. Barker: The Details of its Surgical Treatment.

TUESDAY (15th).—CHELSEA CLINICAL SOCIETY (Chelsea Dispensary, Manor-street, King's-road, S.W.).—8.30 P.M. Annual Clinical Debate: Internal Secretion, in Disease and in Treatment. Prof. Macfadyen, Prof. Hewlett, Dr. H. White, and Dr. R. Bradford will speak.

CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—8 P.M. Lecture:—Dr. D. Sommerville: Physiology in the Curricula of Primary and Secondary Schools

PATHOLOGICAL SOCIETY OF LONDON (Royal Army Medical College, Examination Hall, Victoria Embankment).—8.30 P.M. Lieutenant-Colonel R. H. Firth, R.A.M.C.: Recent Experimental Work on Bacillery Dysentery.—Major W. B. Leishman, R.A.M.C.: Deep Chromatin Staining in Malaria.—Captain D. Harvey, R.A.M.C.: Inoculation Experiments with Trypanosomata.—Dr. T. J. Horder: An Unusual Anatomical Lesion.

FRIDAY (18th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Meeting.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, W.).—5.30 P.M. Clinical Cases, Papers:—Mr. S. Stephenson: Congenital Word Blindness in Children.—Dr. P. Parkinson and Mr. D. Drew: Notes on a Case of Nephro-lithotomy.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (14th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Dr. P. J. Cammidge: The Physiology and Chemistry of the Pancreas. (Arris and Gale Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Dunn: Cataract.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. C. Fox: Clinique. (Skin.) 5.15 P.M. Dr. F. J. McCann: The Diagnosis of Ovarian Tumours.

TUESDAY (15th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Dr. R. Hutchison: Some Disorders of the Blood and Blood-forming Organs in Early Life. (Goulstonian Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Ball: Certain Symptoms of Disease of the Ear.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. P. Luff: Clinique. (Medical.) 5.15 P.M. Dr. G. F. Still: Some Gastro-intestinal Diseases of Infancy and Childhood.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. A. Turner: Bulbar Palsy.

WEDNESDAY (16th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. J. H. Parsons: The Neurology of Vision. (Arris and Gale Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. D. Robinson: Common Disorders of Menstruation.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. C. Ryall: Clinique. (Surgical.) 5.15 P.M. Mr. J. Poland: Deformities after Fractures.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Acland: Pneumothorax.

LONDON TEMPERANCE HOSPITAL (Hampstead-road, N.W.).—4 P.M. Lecture:—Diseases of the Stomach. (Post-Graduate Course.)

THURSDAY (17th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Dr. F. Taylor: Some Disorders of the Spleen. (Lumleian Lecture.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Shuter: Administration of Anæsthetics.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Mr. A. Lane: Abdominal Surgery.

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—5 P.M. Mr. R. H. Bell: Dysmenorrhœa.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—2.30 P.M. Mr. R. Lake: Demonstrations on Laryngeal Tubercular Cases. (II.) (Post-Graduate Course.)

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.). 5.15 P.M. Dr. M. Dockrell: Alopecia. (Chesterfield Lecture.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Voelcker: Pulmonary Tuberculosis in Children with Pathological Demonstration.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Dr. G. P. Chappel: Complications of Phthisis and their Treatment.

FRIDAY (18th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Mr. J. H. Parsons: The Neurology of Vision. (Arris and Gale Lecture.)

POST-GRADUATE COLLEGE (London County Council Lunatic Asylum, Claybury, Woodford Bridge, Essex). 5 P.M. Dr. R. Jones: The Legal Aspects of Insanity and Signing Certificates.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. W. Dodd: Clinique. (Eye).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. Collier: Hydrocephalus.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 10th, 1904

Date	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Varno.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb	Remarks at 8.30 a.m.
Mar. 4	29·95	E.	0·10	43	41	35	36	37	Raining
,, 5	29·95	E.	0·01	57	43	37	38	39	Overcast
,, 6	29·81	E.	...	42	41	36	39	39	Raining
,, 7	29·65	S.E.	0·10	56	47	39	40	41	Overcast
,, 8	29·59	S.W.	0·12	91	57	41	46	47	Cloudy
,, 9	29·88	E.	...	89	59	42	43	44	Foggy
,, 10	30·17	N.E.	0·02	81	45	40	39	40	Cloudy

During the week marked copies of the following newspapers have been received: *Irish Times, Yorkshire Observer, Edinburgh Evening News, Glasgow Herald, Cardiff Mail, Cardiff News, Sheffield Independent, North-Eastern Daily Gazette, Hull Daily News, Birmingham Daily Mail, Belfast News, Dublin Independent, Blackburn Telegraph, Pall Mall Gazette, Cork Constitution, Cork Herald, Bristol Mercury, Westminster Gazette, Hereford Times, Sanitary Record, Army and Navy Gazette, Surrey Comet,* &c.

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